

*2012 Annual Groundwater Monitoring Report
Taylor Lumber and Treating Superfund Site
Sheridan, Oregon*

Prepared for:
Oregon Department of Environmental Quality

May 22, 2012
1843-00/Task 3



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

2012 Annual Groundwater Monitoring Report Taylor Lumber and Treating Superfund Site Sheridan, Oregon

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Table of Contents

1.0 INTRODUCTION	1
1.1 Background	1
1.2 Scope of Work	1
2.0 SUMMARY OF FIELD EVENTS	2
2.1 Well Inspection and Headspace Screening	2
2.2 Groundwater Elevation Measurements	3
2.3 Groundwater Sampling	3
2.4 Handling of Investigation-Derived Waste	3
2.5 Deviations from Work Plan	3
3.0 MONITORING RESULTS	4
3.1 Groundwater Elevation Results	4
3.2 Groundwater Analytical Results	4
4.0 DATA EVALUATION AND CONCLUSIONS	5
5.0 REFERENCES	6

Tables

1	Groundwater Monitoring Program
2	Groundwater Elevation Results
3	Groundwater Analytical Results

Figures

1	Site Location Map
2	Monitoring Well Locations
3	Groundwater Level Elevation Contour Map
4	Pentachlorophenol Concentrations in Groundwater (2011 and 2012)

Appendices

A	Field Notes and Well Sampling Sheets
B	Copy of Ash Creek 2011 <i>Groundwater Monitoring Work Plan</i>
C	Oregon Laboratory Certification, Laboratory Analytical Report, and Data Quality Review
D	Trend Plots for Select Wells



1.0 Introduction

This Groundwater Monitoring Report describes the results of annual groundwater monitoring activities at and in the vicinity of the Taylor Lumber and Treating (TLT) Superfund Site located at 22125 SW Rock Creek Road in Yamhill County, Sheridan, Oregon (Site; Figure 1). This report was prepared for the Oregon Department of Environmental Quality (DEQ) under Task 3 of Task Order No. 57-08-28. The monitoring activities described in this report were conducted in general accordance with the Groundwater Monitoring Work Plan submitted to DEQ on April 22, 2011 (Work Plan; Ash Creek Associates, Inc. [Ash Creek], 2011). The Work Plan was technically based on the *Long-term Groundwater Monitoring and Reporting Plan - Taylor Lumber and Treating Superfund Site* prepared by the United States Environmental Protection Agency (EPA) in March 2010 (LGMP; EPA, 2010). The Work Plan was prepared to be fully inclusive of the LGMP; therefore, there are no significant changes to note between the LGMP and the Work Plan.

1.1 Background

The Site is a wood treating facility that was operated by TLT from 1946 until 2001, when TLT filed for bankruptcy. Pacific Wood Preserving of Oregon (PWPO) entered into a Prospective Purchaser Agreement (PPA) with the EPA and purchased the wood treatment portion of the facility. An Amendment to Agreement and Covenant Not to Sue between EPA and PWPO was finalized on May 26, 2011, and an Amended PPA between DEQ and PWPO was finalized on June 7, 2011. PWPO began operations at the Site in 2002, treating wood using copper- and borate- based solutions. Beginning June 7, 2011, PWPO began using a pentachlorophenol solution to treat wood.

A Record of Decision (ROD) for the Site was signed on September 30, 2005 (EPA, 2005). In accordance with the ROD, contaminated soils have been removed from the Site. However, contaminated soils and groundwater remain within the treatment plant area at the Site, enclosed by a soil-bentonite barrier wall. A low-permeability asphalt cap has been placed over the entire area enclosed by the barrier wall, which impedes the infiltration of stormwater into the groundwater located within the barrier wall. Four groundwater extraction wells have been installed within the barrier wall to stimulate an inward hydraulic gradient and prevent water from rising above the cap (EPA, 2010). The ROD identifies pentachlorophenol (PCP) as the contaminant of concern (COC) in Site groundwater (EPA, 2005).

1.2 Scope of Work

The scope of work was completed in general accordance with the Work Plan (Ash Creek, 2011). The following activities comprise the scope of work as summarized in the Work Plan:

- 1) For health and safety purposes, measure organic vapors in the well headspace prior to monitoring and sampling activities.
- 2) Observe and note well conditions in the project field notes (Appendix A).



-
- 3) Measure water levels in Site monitoring wells as well as in extraction wells PW-01 through PW-04, located within the barrier wall.
 - 4) Measure water quality parameters prior to sampling to determine water stability during purging and to qualify the representativeness of the samples.
 - 5) Collect groundwater samples for PCP analysis from 18 monitoring wells located outside the barrier wall.
 - 6) Collect groundwater samples for PCP analysis from residential wells RW-01 and RW-02.

These activities are discussed in detail within this report as well as any deviations from the Work Plan.

2.0 Summary of Field Events

A field representative from Ash Creek conducted the 2012 annual groundwater monitoring event at the Site from April 9 through 11, 2012. Work was conducted in general accordance with the Sampling and Analysis Plan (SAP) in Appendix B of the Work Plan (Ash Creek, 2011). The Work Plan is provided as Appendix B of this report. As described in Section 1.2, field activities included well headspace monitoring and documentation of well conditions, measurement of depth to water from extraction and monitoring wells, and collection of groundwater samples from monitoring wells and one residential well. Table 1 lists the groundwater monitoring wells and residential wells that were gauged and sampled as part of the Site monitoring program. Any deviations from the Work Plan are discussed in Section 2.5 of this report. The location of the monitoring, extraction, and residential wells included in the monitoring program are shown on Figure 2.

2.1 Well Inspection and Headspace Screening

Prior to sampling, site conditions were recorded including temperature, precipitation, wind direction, and any other factors that could affect sample quality. The well monuments were inspected for signs of damage, and were noted accordingly in the field notes (Appendix A). In general the wells were in good condition, with the exception of missing bolts on some of the flush monument well covers (see notes in Appendix A). The bolt threads on these wells were stripped and could not be repaired during the monitoring event. The well lids were opened and the headspace around each well was screened for organic vapors using a photoionization detector (PID). Headspace concentration measurements were documented in the field notes provided in Appendix A. PID concentrations were consistently below 1 part per million (ppm; PID calibrated to 100 ppm isopropylbenzene), with the exception of MW-15S, which was measured at 1.2 ppm, indicating that breathing space conditions were safe for the field representative.



2.2 Groundwater Elevation Measurements

On April 9, 2012 groundwater elevation measurements were collected from 22 wells in accordance with the Work Plan (Ash Creek, 2011). The well lids and caps were opened a minimum of 5 minutes prior to collecting measurements so that the air pressure in the well had time to equilibrate with the ambient air pressure. Depth to groundwater measurements were conducted with an electronic water level probe in accordance with the SAP (see Appendix B of Appendix B). Depth-to-water measurements and groundwater elevation data are provided in Table 2. A groundwater potentiometric map for the Site and vicinity is provided on Figure 3.

2.3 Groundwater Sampling

Groundwater samples were collected from 18 monitoring wells and one residential well for PCP during the 2012 annual monitoring event. Groundwater was purged in each monitoring well before sampling using dedicated Teflon tubing and a peristaltic pump. Groundwater was purged from the residential well for 10 minutes before sampling. Field parameters, including temperature, pH, dissolved oxygen, oxidation-reduction potential, specific conductivity, and turbidity were collected during the purging process using a flow-through cell. Detailed groundwater sampling procedures are described in the SAP (see Appendix B of Appendix B). Field parameter measurements are documented in the field notes in Appendix A. After purging, groundwater samples were collected in accordance with the Work Plan (Ash Creek, 2011).

2.4 Handling of Investigation-Derived Waste

Investigation-derived waste (IDW) consisted of purge water and decontamination water. IDW generated during the monitoring event was placed in covered buckets and was transported to and disposed of in the drain located to the north of the stormwater treatment system (Figure 2). Disposable items, such as gloves, paper towels, etc., were disposed of as municipal waste.

2.5 Deviations from Work Plan

- During the 2011 monitoring event, the owners of residential well RW-02 told the field representative from Ash Creek that the residential well had not been operable for several years, and that the well water had historically been used for washing cars and had never been used for drinking water. The property owner stated that the residence used a municipal water supply for drinking water. Therefore, RW-02 was not sampled during the 2011 or 2012 monitoring events.
- Monitoring well MW-12S is constructed of 6-inch-diameter PVC casing. During the 2011 monitoring event, it was determined that in order to purge a minimum of three well volumes using the maximum peristaltic pump flow rate, it would take approximately 4.5 hours to purge the well prior to sampling. In order to collect a groundwater sample representative of the aquifer in an



efficient timeframe, field parameters were measured every 5 minutes while purging the well. Once pH and temperature conditions reached values similar to results for the other wells at the Site, and the other field parameters stabilized (dissolved oxygen, turbidity, etc.), the well was considered adequately purged and ready for sampling. For consistency, this sampling procedure was repeated during the 2012 monitoring event. The total purge volume for MW-12S was approximately 0.3 well volumes during the 2011 monitoring event, and 0.7 well volumes during the 2012 monitoring event.

- During the 2011 monitoring event, water levels could not be measured in extraction well PW-03 because the extraction pump rigid tubing was covering the portal for inserting the water level tape. The well cap and tubing configuration could not be safely moved without potentially damaging the extraction pump setup. Prior to the start of the 2012 monitoring event, Ash Creek contacted the PWPO operations manager and requested that the extraction pump configuration be adjusted to allow water level tape access. This was completed before the start of the 2012 monitoring event and allowed a depth to water measurement to be made during the site-wide gauging event.
- An MS/MSD sample was collected in accordance with the Work Plan; however, the laboratory inadvertently neglected to analyze the samples. Implications for sample data quality are discussed in the data quality review provided in Appendix C.

3.0 Monitoring Results

3.1 Groundwater Elevation Results

A groundwater elevation contour map is provided on Figure 3. Groundwater flow at the site is from the northwest to southeast towards the South Yamhill River and is consistent with historical documentation of groundwater flow direction (CMH2MHill, 2003). The groundwater contour map in Figure 3 depicts a depression in the groundwater flow path that coincides with the perimeter or the barrier wall. Within the barrier wall, groundwater elevations are between 5 to 10 feet lower than the surrounding area as groundwater is being actively extracted from within the barrier wall. Within the barrier wall, the groundwater flow direction is not consistent with regional flow, and suggests that groundwater extraction from within the barrier wall has successfully produced a localized inward gradient.

3.2 Groundwater Analytical Results

The groundwater samples were submitted to ESC Lab Sciences (ESC) in Mt. Juliet, Tennessee for laboratory analysis of PCP by EPA Method 8270 (PCP only). ESC is certified to analyze PCP in water samples in the state of Oregon. A copy of the Oregon laboratory certification and analytical reports are included in Appendix C, along with a quality assurance/quality control (QA/QC) review of the data. Despite some laboratory data quality deviations, the results of the data quality review indicate that the data are of acceptable quality and are suitable for their intended purpose. The April 2012 groundwater analytical



results as well as historical analytical results are presented in Table 3. Analytical results for PCP for 2011 and 2012 are summarized on Figure 4.

4.0 Data Evaluation and Conclusions

Concentration trends (from February 2002 through May 2012) for PCP in groundwater from wells MW-1S, MW-11S, MW-15S, MW-16S, PZ-105, and MW-103S are provided in Appendix D. These wells were selected to evaluate long-term concentration trends in Site perimeter and off-site wells and to confirm that PCP in groundwater has not migrated south to the South Yamhill River or to the east under Rock Creek Road. The trend plots for wells MW-15S, MW-16, MW-103S, and PZ-105, all located to the south of the Site, were either stable or decreasing. PCP concentrations in groundwater in wells located to the south of Highway 18B (MW-10S, MW-24S and MW-9S) were non-detect during the April 2012 monitoring event. The data confirm that migration to the south towards the South Yamhill River is not occurring.

Trend plots for wells MW-1S and MW-11S were used to confirm that PCP in groundwater was not migrating beyond the Site barrier wall and to the east under Rock Creek Road. Concentrations in MW-1S have decreased from 14 micrograms per liter ($\mu\text{g/L}$) in November 2002 to non-detect in both April 2011 and April 2012. Concentrations in MW-11S have decreased from 0.87 $\mu\text{g/L}$ in April 2011 to non-detect in April 2012. While concentrations of PCP in well MW-11S have historically varied between detections slightly over reporting limits and having no detectable PCP, there have been no significant increases in PCP concentrations in the well that would indicate that eastern migration is occurring.

Concentrations of PCP have been non-detect in water wells RW-01 and RW-02 since wells were initially sampled in 1999. As discussed in Section 2.5, according to the residential property owner, the well pump at RW-02 has been out of operation for several years. The residents indicated that the well had not been used for drinking water purposes, and only for occasional car washing. The residence is now connected to the municipal water supply. It is anticipated that the water well pump will not be repaired and that well RW-02 will remain out of operation. Based on this well assessment, EPA notified DEQ (via email) on April 30, 2012 that well RW-02 should be removed from the project work plan. Residential well RW-02 will be removed from the work scope for future monitoring events.



5.0 References

- Ash Creek Associates, Inc. (Ash Creek), 2011. *Groundwater Monitoring Work Plan Former Taylor Lumber Site, Sheridan, Oregon*. April 22, 2011.
- CH2MHill, 2003. *Remedial Investigation Report Taylor Lumber and Treating Superfund Site Sheridan, Oregon Volume I*. October, 2003.
- U.S. Environmental Protection Agency (EPA), 2005. *Final Record of Decision Taylor Lumber and Treating Superfund Site, Sheridan, Oregon*. September 30, 2005.
- EPA, 2010. *Long-term Groundwater Monitoring and Reporting Plan. Taylor Lumber and Treating Superfund Site*. March, 2010.



Table 1
Groundwater Monitoring Program
Taylor Lumber and Treating

Well I.D.	Wells to be Sampled	Water Level Measurements*
Outside Barrier Wall		
MW-1S	X	X
MW-6S	X	X
MW-6D	X	X
MW-12S	X	X
MW-13S	X	X
MW-15S	X	X
MW-16S	X	X
MW-19S	X	X
MW-20S	X	X
MW-25S	X	X
MW-103S	X	X
PZ-101	X	X
PZ-102	X	X
PZ-105	X	X
South of Highway 18B		
MW-9S	X	X
MW-10S	X	X
MW-24S	X	X
East of Rock Creek Road		
MW-11S	X	X
Residences**		
RW-01	X	
RW-02	X	
Extraction Wells Inside Barrier Wall		
PW-1		X
PW-02		X
PW-03		X
PW-04		X

- * = Indicates wells in which water level measurements will be collected.
- ** = Residential addresses and contact information are as follows:

RW-01: (b) (6) 0
RW-02: (b) (6)
MW-9S: (b) (6)
MW-11S: Northwest Gazebo - George Gabriel owner - 503-843-0024

Notes: See footnotes in Tables 2 and 3 for any deviations from the monitoring plan.

The EPA Long Term Groundwater Monitoring and Reporting Plan (EPA, 2010) depicted Well MW-9S as both "Outside the Barrier Wall" and "South of Highway 18B". The tables in this report have been revised to denote well MW-9S as "South of Highway 18B" only.

Table 2
Groundwater Elevation Results
Taylor Lumber and Treating

Well Number/ (TOC Elevation)	Date of Measurement	Depth to Water (feet BTOC)	Groundwater Elevation (feet)
Outside Barrier Wall			
MW-1S (207.41)	4/9/2012	3.10	204.31
MW-6S (204.39)	4/9/2012	2.80	201.59
MW-6D (204.04)	4/9/2012	2.45	201.59
MW-12S (204.49)	4/9/2012	2.90	201.59
MW-13S (204.92)	4/9/2012	3.22	201.70
MW-15S (204.68)	4/9/2012	2.87	201.81
MW-16S (205.19)	4/9/2012	2.89	202.30
MW-19S (210.44)	4/9/2012	5.72	204.72
MW-20S (208.87)	4/9/2012	6.32	202.55
MW-25S (208.74)	4/9/2012	6.14	202.60
MW-103S (207.62)	4/9/2012	3.77	203.85
PZ-101 (208.48)	4/9/2012	3.59	204.89
PZ-102 (204.02)	4/9/2012	3.76	200.26
South of Highway 18B			
PZ-105 (205.94)	4/9/2012	4.16	201.78
MW-9S (204.04)	4/9/2012	6.96	197.08
MW-10S (203.17)	4/9/2012	9.83	193.34
MW-24S (205.49)	4/9/2012	13.43	192.06
MW-11S (207.27)	4/9/2012	2.91	204.36
Extraction Wells Inside Barrier Wall			
PW-1 (203.93)	4/9/2012	6.67	197.26
PW-02 (204.96)	4/9/2012	8.87	196.09
PW-03 (206.3)	4/9/2012	10.54	195.76
PW-04 (206.98)	4/9/2012	11.42	195.56

Table 3
Groundwater Analytical Results
Taylor Lumber and Treating

Well ID	Date of Measurement	Pentachlorophenol (µg/L)
Outside Barrier Wall		
MW-1S	5/1/1999*	--
	Feb-02	<25
	May-02	6.9
	Aug-02	14
	Nov-02	14
	Feb-03	6 J
	May-03	3.3
	4/27/2011	<0.33
	4/10/2012	<0.41 J4,J3
MW-6S	May-99	<25
	Feb-02	0.82
	May-02	0.88
	Aug-02	1
	Nov-02	0.88 J
	Feb-03	--
	May-03	--
	4/26/2011	<0.33
	4/26/2011 DUP	<0.33
	4/10/2012	<0.41
	4/10/2012 DUP	<0.41
MW-6D	4/26/2011	<0.33
	4/10/2012	<0.41
MW-12S	May-99	--
	Feb-02	0.32
	May-02	0.3
	Aug-02	0.45
	Nov-02	0.22 J
	Feb-03	--
	May-03	--
	4/26/2011	<0.33
	4/10/2012	<0.41
MW-13S	May-99	--
	Feb-02	0.25
	May-02	0.25
	Aug-02	2
	Nov-02	2.6 J
	Feb-03	<0.32
	May-03	<0.56
	4/26/2011	<0.33
	4/10/2012	<0.41
MW-15S	May-99	--
	Feb-02	220
	May-02	220
	Aug-02	250
	Nov-02	210
	Feb-03	130
	May-03	190
	4/26/2011	12
	4/10/2012	15 J4,J3

Please refer to notes at end of table.

Table 3
Groundwater Analytical Results
Taylor Lumber and Treating

Well ID	Date of Measurement	Pentachlorophenol (µg/L)
MW-16S	May-99	--
	Feb-02	10.0
	May-02	15.0
	Aug-02	28.0
	Nov-02	21 J
	Feb-03	11.0
	May-03	11.0
	4/26/2011	11.0
	4/26/2011 DUP	11.0
	4/10/2012	5.8
	4/10/2012 DUP	8.7
MW-19S	May-99	--
	Feb-02	--
	May-02	--
	Aug-02	0.067
	Nov-02	<0.32
	Feb-03	<0.32
	May-03	0.061
	4/27/2011	<0.33
	4/11/2012	<0.41
MW-20S	May-99	--
	Feb-02	--
	May-02	--
	Aug-02	0.013 J
	Nov-02	<0.32
	Feb-03	<0.32
	May-03	0.027 J
	4/27/2011	<0.33
	4/11/2012	<0.41
MW-25S	12/19/2005	424
	12/19/2005 DUP	396
	4/27/2011	230
	4/11/2012	200
MW-103S	May-99	5.6
	Feb-02	6.4
	May-02	7
	Aug-02	12
	Nov-02	4.7 J
	Feb-03	5
	May-03	20
	4/27/2011	1.6
	4/11/2012	1.4
PZ-101	May-99	<25
	Feb-02	0.14
	May-02	0.15
	Aug-02	0.14
	Nov-02	1.1 J
	Feb-03	--
	May-03	0.067
	4/27/2011	<0.33
	4/11/2012	<0.41
PZ-102	May-99	<25
	Feb-02	0.37
	May-02	0.3
	Aug-02	0.34
	Nov-02	0.13 J
	Feb-03	0.23 J
	May-03	<0.32
	4/27/2011	<0.33
	4/10/2012	<0.41

Please refer to notes at end of table.

Table 3
Groundwater Analytical Results
Taylor Lumber and Treating

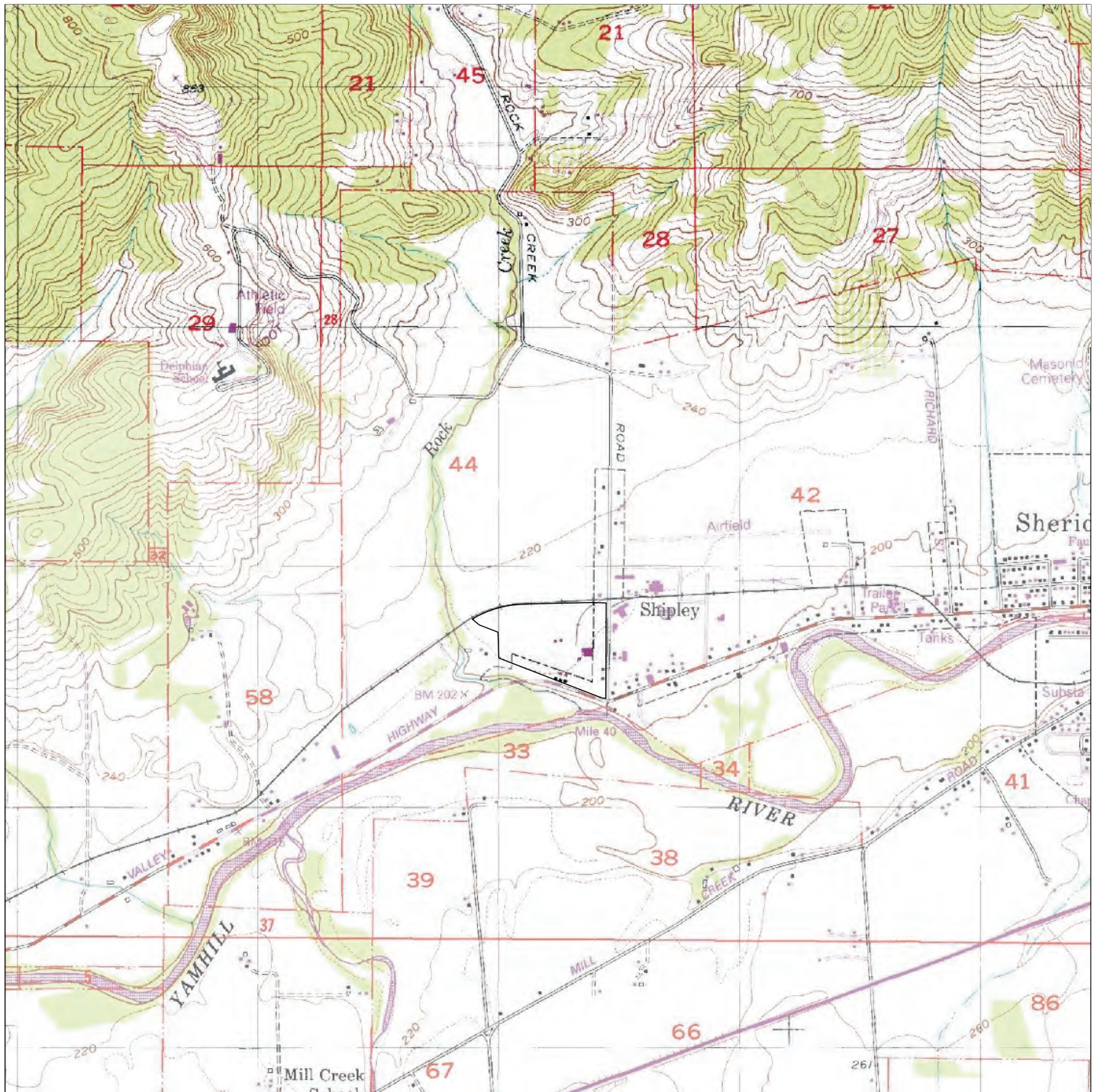
Well ID	Date of Measurement	Pentachlorophenol (µg/L)
PZ-105	May-99	82 J
	Feb-02	3.5
	May-02	8.2
	Aug-02	17
	Nov-02	4.0 J
	Feb-03	0.77
	May-03	2.6
	4/26/2011	<0.33
	4/10/2012	<0.41
South of Highway 18B		
MW-9S	May-99	<24
	Feb-02	<0.047
	May-02	<0.049
	Aug-02	<0.023
	Nov-02	<0.32
	Feb-03	<0.32
	May-03	<0.046
	4/26/2011	<0.33
	4/11/2012	<0.41
MW-10S	May-99	<26
	Feb-02	0.099
	May-02	0.13
	Aug-02	0.38
	Nov-02	0.18 J
	Feb-03	<0.32
	May-03	0.13
	4/27/2011	<0.33
	4/11/2012	<0.41
MW-24S	4/27/2011	<0.33
	4/11/2012	<0.41 J4,J3
East of Rock Creek Road		
MW-11S	May-99	<25
	Feb-02	0.18
	May-02	0.18
	Aug-02	0.36
	Nov-02	<0.32
	Feb-03	<0.32
	May-03	0.18
	4/27/2011	0.87 J
	4/11/2012	<0.41
Residences		
RW-01	May-99	<25
	Feb-02	<0.045
	May-02	<0.049
	Aug-02	<0.046
	Nov-02	<0.32
	Feb-03	<0.045
	May-03	<0.046
	4/27/2011	<0.33
	4/11/2012	<0.41

Please refer to notes at end of table.

Table 3
Groundwater Analytical Results
Taylor Lumber and Treating

Well ID	Date of Measurement	Pentachlorophenol (µg/L)
RW-02	May-99	--
	Feb-02	<0.045
	May-02	0.026 J
	Aug-02	0.046 J
	Nov-02	<0.32
	Feb-03	--
	May-03	0.026 J
	4/26/2011	--
	4/10/2012	--

1. Sample dates for historical (pre-2005) data are not available; results available in month/year format only.
2. J = Detected value was below the lowest calibration point for the analysis; therefore, results are estimated.
3. J3 = The relative percent difference (RPD) is above the method limit.
4. J4 = The laboratory control sample or laboratory control sample duplicate is outside control limits.
5. -- = Not Sampled
6. **BOLD** indicates analyte detected above method reporting limit.
8. DUP = Duplicate sample.
9. * = RW-02 not sampled during April 2011 monitoring event. During the monitoring event the residential property owner indicated that the water well pump was no longer operable. For this reason, RW-02 was not sampled during the April 2012 monitoring event.



Note: Base map prepared from USGS 7.5-minute quadrangle of Sheridan, OR, revised 1992 as provided by MSR Maps.com.

0 2,000 4,000
Approximate Scale in Feet



Site Location Map

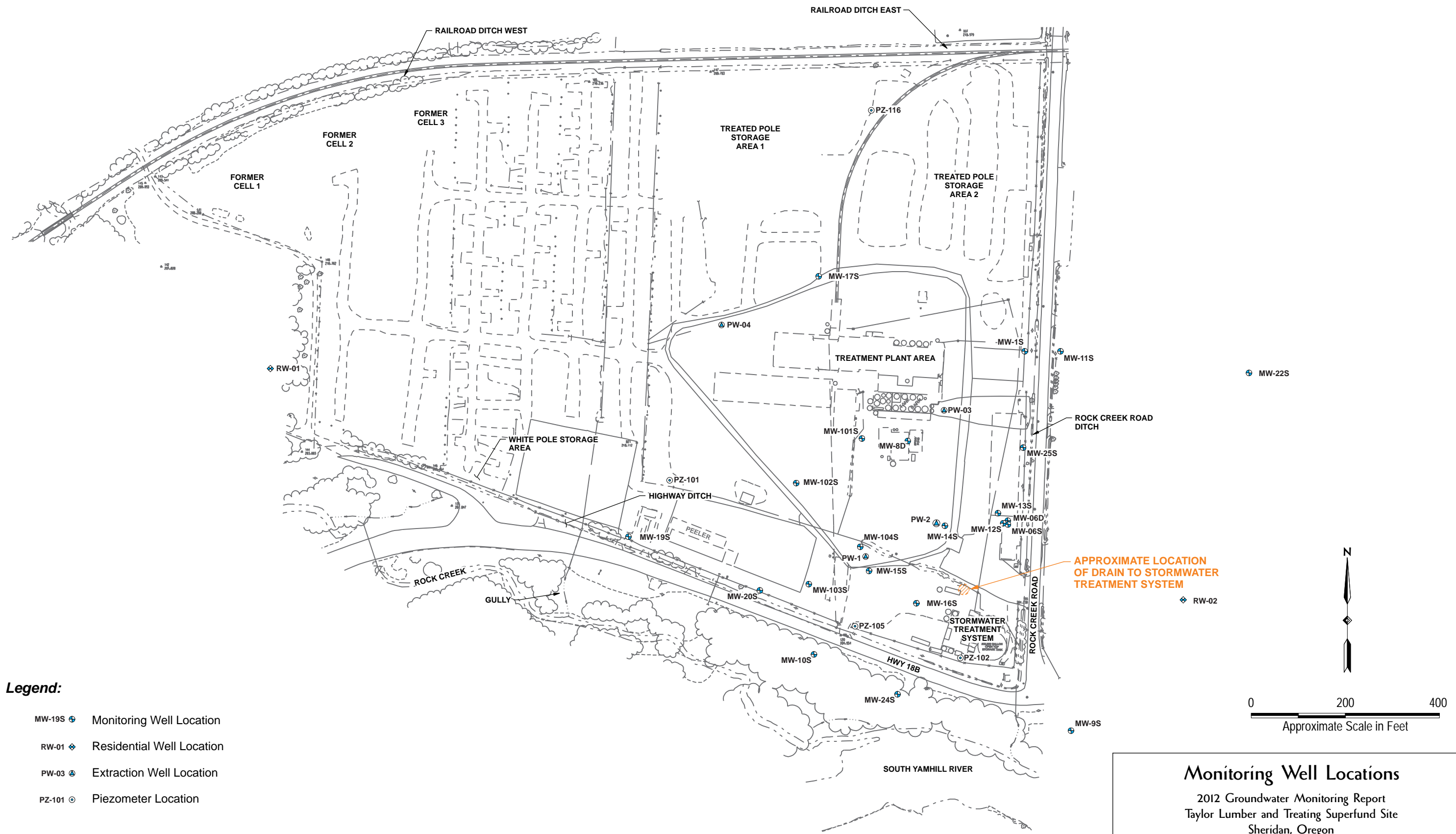
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Sheridan, Oregon

Ash Creek Associates
A Division of Apex Companies, LLC



Project Number 1843-00
May 2012

Figure
1



Legend:

- MW-19S + Monitoring Well Location
- RW-01 ♦ Residential Well Location
- PW-03 ● Extraction Well Location
- PZ-101 ⊙ Piezometer Location

NOTE: Base map prepared from a CH2MHILL Monitor Well Plan (6/11/2009).

Monitoring Well Locations

2012 Groundwater Monitoring Report
Taylor Lumber and Treating Superfund Site
Sheridan, Oregon

Appendix A

Field Notes and Well Sampling Sheets

[illegible]

[illegible]

Well I.D.	MW-15S	Job Number:	1843-00/Task 3
Client:	Oregon DEQ	Date:	04/10/12
Project:	Taylor Lumber GWM	Sampler:	M. Whitson
Weather:	CLOUDY (51°F) CALM WINDS	Time In/Out:	0950/

Well Depth:	12.5'	Well Diameter:	2.0"	Water Height	9.52
Depth to Water:	2.98	Screened Interval:		x Multiplier	0.162
Water Column Length:	9.52	Depth to Free Product:		x Casing Volumes	3
Purge Volume:		Free Product Thickness:		= Purge Volume	1.54
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	4.63

[illegible]

SAMPLING DATA

Sample ID:	MW-135	Sampling Flow Rate	0.13	Analytical Laboratory:	ESC Lab Sciences	
Sample Time:	1045	Final Depth to Water:	3.05	Did Well Dewater?	N	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 X 1 Liter Amb Glass	NEAT	PCP	yes (no)	--	--	--

COMMENTS

[illegible]

[illegible]

Well I.D.	PZ-102	Job Number:	1843-00/Task 3
Client:	Oregon DEQ	Date:	04/10/12
Project:	Taylor Lumber GWM	Sampler:	M. Whitson
Weather:	OVERCAST/CLOUDY (59°F CALM)	Time In/Out:	1200/

Well Depth:	12.2'	Well Diameter:	2"	Water Height	8.30
Depth to Water:	3.90'	Screened Interval:		x Multiplier	0.162
Water Column Length:	8.30	Depth to Free Product:		x Casing Volumes	3
Purge Volume:		Free Product Thickness:		= Purge Volume	1.34
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	4.03

[illegible]

SAMPLING DATA

Sample ID:	PZ-102	Sampling Flow Rate	0.13	Analytical Laboratory:	ESC Lab Sciences	
Sample Time:	1305	Final Depth to Water:	3.98'	Did Well Dewater?	N	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 X 1 Liter Amb Glass	NEAT	PCP	yes no	--	--	--

COMMENTS

[illegible]

[illegible]

Well I.D.	MW-06S	Job Number:	1843-00/Task 3
Client:	Oregon DEQ	Date:	04/10/12
Project:	Taylor Lumber GWM	Sampler:	M. Whitson
Weather:	CLOUDY (64°F) CALM	Time In/Out:	1520/

Well Depth:	11.9'	Well Diameter:	2"	Water Height	8.82
Depth to Water:	3.08	Screened Interval:		x Multiplier	0.162
Water Column Length:	8.82	Depth to Free Product:		x Casing Volumes	3
Purge Volume:		Free Product Thickness:		= Purge Volume	1.43
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	4.29

[illegible]

SAMPLING DATA

Sample ID:	MW-06S	Sampling Flow Rate	0.16	Analytical Laboratory:	ESC Lab Sciences	
Sample Time:	1630	Final Depth to Water:	3.69	Did Well Dewater?	N	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 X 1 Liter Amb Glass	NEAT	PCP	yes (no)	--	--	MW-06SDUP

[illegible]

[illegible]

[illegible]

Well I.D.	MW-255	Job Number:	1843-00/Task 3
Client:	Oregon DEQ	Date:	04/11/12
Project:	Taylor Lumber GWM	Sampler:	M. Whitson
Weather:	CLOUDY (49°F) CALM WINDS	Time In/Out:	0805/

Well Depth:	19.3'	Well Diameter:	2"	Water Height	12.97'
Depth to Water:	6.06'	Screened Interval:		x Multiplier	0.162
Water Column Length:	12.97'	Depth to Free Product:		x Casing Volumes	3
Purge Volume:		Free Product Thickness:		= Purge Volume	2.10
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	6.30

[illegible]

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

Sample ID:	MW-255	Sampling Flow Rate	0.16	Analytical Laboratory:	ESC Lab Sciences	
Sample Time:	0915	Final Depth to Water:	6.54	Did Well Dewater?	N	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 X 1 Liter Amb Glass	NEAT	PCP	yes (no)	-	-	-

COMMENTS

Well I.D.	MW-95	Job Number:	1843-00/Task 3
Client:	Oregon DEQ	Date:	04/11/12
Project:	Taylor Lumber GWM	Sampler:	M. Whitson
Weather:	CLOUDY/V.LT. RAIN (50°F) CALM	Time In/Out:	0920/

Well Depth:	14.3	Well Diameter:	2"	Water Height	7.15'
Depth to Water:	7.15'	Screened Interval:		x Multiplier	0.162
Water Column Length:	7.15'	Depth to Free Product:		x Casing Volumes	3
Purge Volume:		Free Product Thickness:		= Purge Volume	1.16
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	348

[illegible]

SAMPLING DATA

Sample ID:	MW-95	Sampling Flow Rate	0.16	Analytical Laboratory:	ESC Lab Sciences	
Sample Time:	0955	Final Depth to Water:	7.49'	Did Well Dewater?	N	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 X 1 Liter Amb Glass	NEAT	PCP	yes <u>no</u>	--	--	--

[illegible]

Well I.D.	MW-103s	Job Number:	1843-00/Task 3
Client:	Oregon DEQ	Date:	04/11/12
Project:	Taylor Lumber GWM	Sampler:	M. Whitson
Weather:	CLOUDY (50°F) CALM WINDS	Time In/Out:	1005

Well Depth:	16.0'		Well Diameter:	2"	Water Height	12.09'
Depth to Water:	3.91'		Screened Interval:		x Multiplier	0.162
Water Column Length:	12.09'		Depth to Free Product:		x Casing Volumes	3
Purge Volume:			Free Product Thickness:		= Purge Volume	1.96
Water Height Multipliers (gal)		1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	588

[illegible]

SAMPLING DATA

Sample ID:	MW-1035	Sampling Flow Rate	0.18	Analytical Laboratory:	ESC Lab Sciences	
Sample Time:	1055	Final Depth to Water:	4.28'	Did Well Dewater?	N	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 X 1 Liter Amb Glass	NEAT	PCP	yes no	--	--	—

[illegible]

Well I.D.	MW-20S	Job Number:	1843-00/Task 3
Client:	Oregon DEQ	Date:	04/11/12
Project:	Taylor Lumber GWM	Sampler:	M. Whitson
Weather:	CLOUDY (53°F) CALM	Time In/Out:	1105/

Well Depth:	14.5	Well Diameter:	2"	Water Height	10.39
Depth to Water:	$6.62 - 2.51 = 4.11$	Screened Interval:		x Multiplier	0.162
Water Column Length:	10.39	Depth to Free Product:		x Casing Volumes	3
Purge Volume:		Free Product Thickness:		= Purge Volume	1.68
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

SAMPLING DATA

Sample ID:	MW-205	Sampling Flow Rate	0.16	Analytical Laboratory:	ESC Lab Sciences	
Sample Time:	1215	Final Depth to Water:	10.25'	Did Well Dewater?	N	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 X 1 Liter Amb Glass	NEAT	PCP	yes <u>no</u>	--	--	--

COMMENTS

[illegible]

Well I.D.	PZ-101	Job Number:	1843-00/Task 3
Client:	Oregon DEQ	Date:	04/11/12
Project:	Taylor Lumber GWM	Sampler:	M. Whitson
Weather:	LT RAIN (50's) CALM	Time In/Out:	1340/

Well Depth:	13.5'	Well Diameter:	2"	Water Height	11.55
Depth to Water:	363 - 1.68 = 1.95	Screened Interval:		x Multiplier	0.162
Water Column Length:	11.55	Depth to Free Product:		x Casing Volumes	3
Purge Volume:		Free Product Thickness:		= Purge Volume	1.87
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

SAMPLING DATA

Sample ID:	PZ-101	Sampling Flow Rate	0.15	Analytical Laboratory:	ESC Lab Sciences	
Sample Time:	1/4/5	Final Depth to Water:	3.65'	Did Well Dewater?	YES	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 X 1 Liter Amb Glass	NEAT	PCP	yes <u>no</u>	--	--	

[illegible]

Well I.D.	MW-115	Job Number:	1843-00/Task 3
Client:	Oregon DEQ	Date:	04/11/12
Project:	Taylor Lumber GWM	Sampler:	M. Whitson
Weather:	LT RAIN (50'S F) CALMI	Time In/Out:	1500/

Well Depth:	19.25'	Well Diameter:	2"	Water Height	16.29
Depth to Water:	2.96'	Screened Interval:		x Multiplier	0.162
Water Column Length:	16.29	Depth to Free Product:		x Casing Volumes	3
Purge Volume:		Free Product Thickness:		= Purge Volume	2.64
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

SAMPLING DATA

Sample ID:	MW-115	Sampling Flow Rate	0.18	Analytical Laboratory:	ESC Lab Sciences	
Sample Time:	1600	Final Depth to Water:	3.95	Did Well Dewater?	N	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 X 1 Liter Amb Glass	NEAT	PCP	yes <u>no</u>	--	--	—

[illegible]

[illegible]

[illegible]

Appendix B

Copy of Ash Creek 2011 *Groundwater Monitoring Work Plan*

*Groundwater Monitoring Work Plan
Former Taylor Lumber Site
Sheridan, Oregon*

Prepared for:
Oregon Department of Environmental Quality

April 22, 2011
1843-00



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Groundwater Monitoring Work Plan Former Taylor Lumber Site Sheridan, Oregon

Prepared for:
Oregon Department of Environmental Quality

April 22, 2011
1843-00

Stephanie Bosze, R.G.
Project Geologist, Ash Creek Associates



EXPIRES: DEC. 31, 2011

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Table of Contents

1.0 INTRODUCTION	1
1.1 Background	1
1.2 Objective.....	1
1.3 Scope of Work	1
2.0 GROUNDWATER MONITORING ACTIVITIES	2
2.1 Preparatory Activities.....	2
2.2 Documentation of Well Conditions.....	3
2.3 Groundwater Elevation Measurements	3
2.4 Groundwater Sampling.....	3
2.5 Handling of Investigation-Derived Waste.....	4
3.0 ANALYTICAL PROGRAM	4
4.0 QUALITY ASSURANCE AND QUALITY CONTROL.....	4
5.0 ANNUAL REPORTING	5
6.0 REFERENCES	5

Table

- | | |
|---|-----------------|
| 1 | Monitoring Plan |
|---|-----------------|

Figures

- | | |
|---|-------------------|
| 1 | Site Location Map |
| 2 | Site Plan |

Appendices

- | | |
|---|----------------------------|
| A | Health and Safety Plan |
| B | Sampling and Analysis Plan |



1.0 Introduction

This Groundwater Monitoring Work Plan presents the scope of work for groundwater monitoring activities at the former Taylor Lumber and Treating (TLT) Superfund Site located at 22125 SW Rock Creek Road in Yamhill County, Sheridan, Oregon (Site; Figure 1). This Work Plan was prepared for the Oregon Department of Environmental Quality (DEQ) under Task 2 of Task Order No. 57-08-28. This Work Plan covers two annual monitoring events to be conducted in April 2011 and April 2012. The specific scope of work is the same for each event.

1.1 Background

The Site is a wood treating facility that was operated by TLT from 1946 until 2001, when TLT filed for bankruptcy. Pacific Wood Preserving of Oregon (PWPO) entered into a Prospective Purchaser Agreement with the U.S. Environmental Protection Agency (EPA) and purchased the wood treatment portion of the facility. PWPO began operations at the Site in 2002 and is currently treating wood using copper- and borate-based solutions.

A Record of Decision (ROD) for the Site was signed on September 30, 2005 (EPA, 2005). In accordance with the ROD, contaminated soils have been removed from the Site. However, contaminated soils and groundwater remain within the treatment plant area at the Site, enclosed by a soil-bentonite barrier wall. A low-permeability asphalt cap has been placed over the entire area enclosed by the barrier wall, which impedes the infiltration of stormwater into the groundwater located within the barrier wall. Four groundwater extraction wells have been installed within the barrier wall to stimulate an inward hydraulic gradient and prevent water from rising above the cap (EPA, 2010). The ROD identifies pentachlorophenol (PCP) as the contaminant of concern (COC) in Site groundwater (EPA, 2005).

1.2 Objective

The primary objective of the groundwater monitoring program is to confirm that PCP impacted groundwater is not migrating beyond the barrier wall to the Yamhill River to the south or across Rock Creek Road to residential wells.

1.3 Scope of Work

In March 2010, the EPA prepared a Long-Term Groundwater Monitoring and Reporting Plan (EPA Work Plan) for the Site (EPA, 2010). The plan outlined a groundwater monitoring program for the Site including field sampling procedures, quality assurance/quality control (QA/QC) evaluation, sampling handling, and documentation procedures. This Work Plan incorporates the major components of the EPA Work Plan.



The following scope of work, as excerpted from the EPA Work Plan, will accomplish the primary project objective as described in Section 1.2:

- 1) Groundwater samples will be collected for PCP analysis from 19 monitoring wells located outside the barrier wall.
- 2) Groundwater samples will be collected for PCP analysis from residential wells RW-01 and RW-02.
- 3) Water quality parameters will be measured prior to sampling to determine water stability during purging and to qualify the representativeness of the samples.
- 4) Water levels will be measured in each of the above-referenced monitoring wells as well as in extraction wells PW-01 through PW-04, located within the barrier wall.
- 5) For health and safety purposes, organic vapors will be measured in the well headspace prior to monitoring and sampling activities.

These activities are discussed in further detail within this Work Plan. Table 1 lists the groundwater and residential wells that will be gauged and sampled as part of the Site monitoring program. The location of the monitoring, extraction, and residential wells included in the monitoring program are shown on Figure 2.

2.0 Groundwater Monitoring Activities

The groundwater monitoring program will include preparatory activities, collection of groundwater elevation measurements, and collection of groundwater samples for chemical analysis.

2.1 Preparatory Activities

Site Health and Safety Plan. A Site-specific health and safety plan (HASP) has been prepared for the proposed activities. Appendix A includes a copy of the HASP. The HASP was prepared in general accordance with the Occupational Safety and Health Act (OSHA) and the Oregon Administrative Rules (OAR). A copy of the HASP will be maintained on-site during the field activities.

Property Access. PWPO will be contacted a minimum of one week prior to each field event. Prior to entering the site, field staff will also check in at the PWPO main office. The main office is located at 22125 Rock Creek Road, with the primary entrance located off Highway 18B.

Residential Notifications. One monitoring well (MW-9S) and two residential water wells (RW-01 and RW-02) are located off-site, as shown on Figure 2. The owners of these properties will be notified a minimum of one week prior to sampling. Contact information for the residents is provided in the EPA Work Plan (EPA, 2010).



2.2 Documentation of Well Conditions

Prior to sampling, Site conditions will be recorded including temperature, precipitation, wind direction, and any other factors that could affect sample quality. The well monuments will be inspected for signs of damage, and will be noted accordingly in the field notes. The current well locks will be cut off with a bolt cutter and replaced with new locks that utilize a common key. The DEQ project manager and key project personnel will be provided with a copy of the well key.

Prior to sampling, the headspace around each well will be screened for organic vapors using a photoionization detector (PID). Headspace concentrations will be documented in the field notes and any volatiles will be allowed to dissipate before sampling.

2.3 Groundwater Elevation Measurements

Groundwater elevation measurements will be collected in accordance with the EPA Work Plan (EPA, 2010). Wells in which water levels will be measured are listed in Table 1. It is possible there will be a difference in air pressure between the air in the casing and barometric pressure at the time of collecting well measurements. Since such a differential pressure could affect water level results, the well lids and caps will be opened for at least five minutes before making measurements so that the air pressure has adequate time to equilibrate. Water level measurements will be measured with an electronic water level probe and recorded on the appropriate field data sheet with an accuracy of ± 0.01 foot.

2.4 Groundwater Sampling

Groundwater samples will be collected from the wells listed in Table 1.

Well Purging. Groundwater will be purged before sampling using dedicated Teflon tubing and a peristaltic pump. Field parameters, including temperature, pH, dissolved oxygen, oxidation-reduction potential, specific conductivity, and turbidity will be collected during the purging process using a flow-through cell. Detailed groundwater sampling procedures are described in the sampling and analysis plan (SAP; Appendix B).

Well Sampling. Groundwater sampling will be conducted in accordance with Ash Creek's standard operating procedures (SOPs) which are included in the SAP (Appendix B). Where the SOPs differ from the EPA Work Plan, procedures are typically deferred to those outlined in the EPA Work Plan, and are denoted accordingly in the SAP.

Purging and Sampling of Residential Wells. The locations of the two off-site residential wells are shown on Figure 2. Well RW-01 is located to the west of the Site and will be accessed from the faucet at the pump house that is facing Highway 18. Well RW-02 is located three houses east of Rock Creek Road on



Highway 18. The well is located at the northwest corner of the house. The specific location of the RW-02 and type of sampling port present (i.e., borehole, tap, etc.) will be verified by the property owner.

Water taps will be opened and allowed to run for approximately 10 minutes to clear the system (including a pressure equalizing tank, if present) of residual water in the piping. Following the system purge, a sample will be collected from the tap for measurement of field parameters. The tap will be allowed to run for another 3 minutes before collecting another sample for the measurement of field parameters (pH, electrical conductivity, temperature). This procedure will be repeated until field parameters stabilized to within 10 percent of the previous measurements for three successive measurements. Following completion of "purging" procedures as described above, the groundwater sample will be collected directly from the tap. Sample containers will be provided by the laboratory ready for sample collection, including preservative.

Procedures for labeling and storing the samples are summarized in the SAP (Appendix B).

2.5 Handling of Investigation-Derived Waste

Investigation-derived waste (IDW) will consist of purge water and decontamination water. IDW will be temporarily placed in buckets or drums and will be transported to and disposed of in the drain located to the north of the stormwater treatment system (Figure 2). The Site operations manager will direct field staff to the location of the drain. At a minimum, buckets will be emptied into the drain prior to the end of each field day. Disposable items, such as gloves, paper towels, etc., will be placed in plastic bags after use and deposited in trash receptacles for disposal.

3.0 Analytical Program

Groundwater samples collected from the monitoring wells and residential water wells during both monitoring events will be analyzed for PCP by EPA Method 8270 SIM. Additional information on the analytical program, including sample handling procedures, required analytical reporting limits, preservation requirements, and sample hold times, are summarized in the SAP (Appendix B).

4.0 Quality Assurance and Quality Control

QA/QC procedures will be used throughout this project. The SAP in Appendix B includes the QA plan for this project. This plan includes sampling and custody procedures, QA sampling analyses (such as analysis of duplicates), detection limit goals, laboratory QC, and QA reporting. Groundwater sampling will be conducted in accordance with the QA/QC requirements outlined in the EPA Work Plan (EPA, 2010).



5.0 Annual Reporting

Following each annual monitoring event, a groundwater monitoring report will be prepared and submitted to the DEQ. The quarterly monitoring report will include the following components:

- Summary of field events;
- Summary of problems encountered or deviations from monitoring program;
- Summary table with validated analytical results;
- Summary table with water level measurements;
- Groundwater elevation contour maps; and
- Analytical laboratory testing program and documentation (including a QA review).

The 2011 annual monitoring report will initially be prepared as a draft for review by the DEQ. Upon receipt of DEQ's comments, Ash Creek will issue the report in final form. The 2012 report will incorporate DEQ's comments on the 2011 report, and will be submitted only in final form.

6.0 References

- U.S. Environmental Protection Agency (EPA), 2005. *Final Record of Decision Taylor Lumber and Treating Superfund Site, Sheridan, Oregon*. September 30, 2005.
- EPA, 2010. *Long-term Groundwater Monitoring and Reporting Plan. Taylor Lumber and Treating Superfund Site*. March, 2010.



Table 1
Monitoring Program
Taylor Lumber and Treating

Well I.D.	Wells to be Sampled	Water Level Measurements*
Outside Barrier Wall		
MW-1S	X	X
MW-6S	X	X
MW-6D	X	X
MW-9S	X	X
MW-12S	X	X
MW-13S	X	X
MW-15S	X	X
MW-16S	X	X
MW-19S	X	X
MW-20S	X	X
MW-25S	X	X
MW-103S	X	X
PZ-101	X	X
PZ-102	X	X
PZ-105	X	X
South of Highway 18B		
MW-9S	X	X
MW-10S	X	X
MW-24S	X	X
East of Rock Creek Road		
MW-11S	X	X
Residences**		
RW-01	X	
RW-02	X	
Extraction Wells Inside Barrier Wall		
PW-1		X
PW-02		X
PW-03		X
PW-04		X

1. PCP = pentachlorophenol.
2. * = Indicates wells in which water level measurements will be collected.
3. ** = Residential addresses and contact information are as follows:

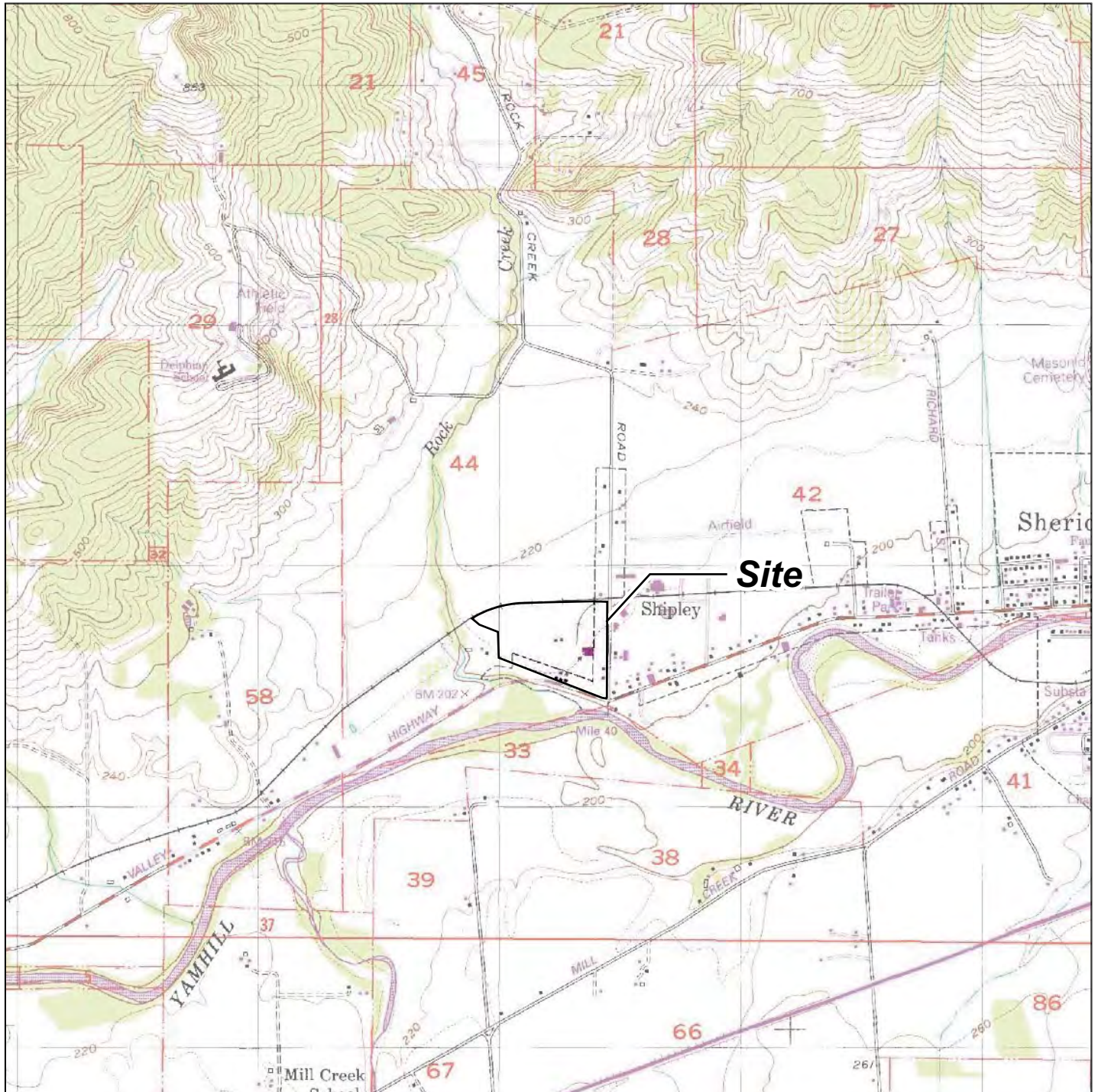
RW- 01: (b) (6)

RW-02: (b) (6)

(b) (6)

MW-9S: (b) (6)

MW-11S: Northwest Gazebo - George Gabriel owner - 503-843-0024



Note: Base map prepared from USGS 7.5-minute quadrangle of Sheridan, OR, revised 1992 as provided by MSR Maps.com.

0 2,000 4,000
Approximate Scale in Feet



Site Location Map

Groundwater Monitoring Work Plan
Former Taylor Lumber Site
Sheridan, Oregon



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number 1843-00

April 2011

Figure

1

Appendix A

Health and Safety Plan

Record of Health and Safety Communication

PROJECT NAME: DEQ - Former Taylor Lumber Project			
SITE CONTAMINANTS: Pentachlorophenol			
PPE REQUIREMENTS (check all that apply):			
<input checked="" type="checkbox"/> Safety Glasses		<input checked="" type="checkbox"/> Clothing : Safety Vest	
<input checked="" type="checkbox"/> Safety Boots		<input type="checkbox"/> Respiratory Protection :	
<input checked="" type="checkbox"/> Hard Hat		<input type="checkbox"/> Other :	
<input checked="" type="checkbox"/> Gloves :			
The following personnel have reviewed a copy of the Summary Information regarding the Site, and the General Health and Safety Plan (and attachments). By signing below, these personnel indicate that they have read the plan, including all referenced information, and that they understand the requirements which are detailed for this project.			
PRINTED NAME	SIGNATURE	COMPANY	DATE

Appendix A – Site-Specific Health and Safety Plan

1.0 Introduction

This Health and Safety Plan (HASP) includes both Site-specific information (including Site-specific activities, health hazards, route to hospital, and toxicity information) and the general Ash Creek Associates (Ash Creek) Health and Safety Plan (General HASP).

1.1 Emergency Contact Summary

SITE LOCATION	22125 SW Rock Creek Road, Sheridan, OR
NEAREST HOSPITAL	West Valley Hospital 525 Southeast Washington Street Dallas, OR 97338-2834 (See HASP-1) Telephone (503) 842-4444
EMERGENCY RESPONDERS	Police Department 9-1-1 Fire Department 9-1-1 Ambulance 9-1-1
EMERGENCY CONTACTS	Ash Creek Associates (503) 924-4704 National Response Center (800) 424-8802 Oregon Accident Response System (800) 452-0311 Environmental Response Team (503) 283-1150 Poison Control Center (800) 222-1222 Chemtrec (800) 424-9300

In the event of an emergency, call for help as soon as possible. Give the following information:

- WHERE the emergency is (use cross-streets or landmarks)
- PHONE NUMBER you are calling from
- WHAT HAPPENED (type of injury)
- HOW MANY persons need help
- WHAT is being done for the victim(s)
- YOU HANG UP LAST (let the person you called hang up first)

2.0 Corporate Health and Safety Plan

The Ash Creek General HASP, together with the included Site-specific information, cover each of the 11 required plan elements as specified in OSHA 1910.120, and meets all applicable regulatory requirements. The reader is advised to thoroughly review the entire plan.



3.0 Site-Specific Health and Safety Plan

3.1 Site Location and Description

LOCATION: 22125 SW Rock Creek Road, Sheridan, OR

LAND USE OF AREA SURROUNDING FACILITY: Industrial

3.2 Site Activity Summary

SITE ACTIVITIES: Groundwater sampling.

PROPOSED DATE OF ACTIVITY: April 2011 and April 2012.

POTENTIAL SITE CONTAMINANTS: Pentachlorophenol.

POTENTIAL ROUTES OF ENTRY: Potential routes of entry include skin contact with soil and groundwater, incidental ingestion of soil and groundwater, and inhalation of dust and volatiles.

PROTECTIVE MEASURES: Engineering controls, safety glasses, safety boots, hard hat, gloves, protective clothing, and respirators (as necessary).

MONITORING EQUIPMENT: Photoionization detector (PID) with 10.2 eV Lamp; olfactory indications.

3.3 Chain of Command

The chain of command for health and safety in this project involves the following individuals:

CORPORATE HEALTH AND SAFETY MANAGER: Mike Stevens, P.E.

PROJECT MANAGER: Stephanie L. Bosze, R.G..

PROJECT HEALTH AND SAFETY OFFICER: Stephanie L. Bosze, R.G.

FIELD HEALTH AND SAFETY MANAGER: Ian Maguire

3.4 Hazard Analysis and Applicable Safety Procedures

The following work tasks will be accomplished:

- 1) Groundwater sampling

The associated hazards for the above activities that may be anticipated during this project are discussed in detail below.



Appendix A – Site-Specific Health and Safety Plan

3.4.1 Groundwater Monitoring

Any sampling will occur under the assumption the media is contaminated and appropriate personnel protection will be required.

3.4.2 Air Monitoring and Action Levels

PID Monitoring. Air monitoring will be conducted with a PID with 10.2 eV lamp, or equivalent, to measure organic vapor concentration during Site work activities (the 10.2 eV lamp is specified to allow detection of halogenated compounds). Background PID measurements will be taken prior to the start of groundwater monitoring to quantify levels associated with the ambient air space in the vicinity of the Site. Subsequent PID measurements will be taken when well caps are initially removed for sampling. If PID measurements are elevated relative to the previously measured background levels, then sampling will be deferred to allow vapors to dissipate. PID measurements shall be consistent with background prior to sampling activities.

Olfactory. If olfactory senses detect any unfamiliar odor, work will stop until an assessment can be made to determine whether the need exists to upgrade protective measures.

3.5 Chemicals of Concern

Based on Site information gathered to date, the following chemical may be present at the Site:

- Pentachlorophenol (PCP)

3.5.1 Toxicity Information

Pertinent toxicological properties of the chemicals of concern are discussed below. This information generally covers potential toxic effects which may occur from relatively significant acute and/or chronic exposures, and is not meant to indicate that such effects will occur from the planned Site activities. In general, the chemicals which may be encountered at the Site are not expected to be present at concentrations that could produce significant exposures. The types of planned work activities should also limit potential exposures at the Site. Furthermore, appropriate protective and monitoring equipment will be used, as discussed below, to further minimize any exposures that might occur.

Standards for occupational exposures to these chemicals are included where available. Site exposures are generally expected to be of short duration and well below the level of any of these exposure limits. These standards are presented below.

PEL Permissible Exposure Limit (Occupational Safety and Health Act [OSHA])

REL Recommended Exposure Limit (NIOSH)



Appendix A – Site-Specific Health and Safety Plan

- IDLH Immediately Dangerous to Life and Health (NIOSH)
- TWA Time-Weighted Average (exposure limit for any eight-hour work shift of a 40-hour work week)
- STEL Short-Term Exposure Limit (expressed as a 15-minute, time-weighted average, and not to be exceeded at any time during a work day)
- C Ceiling Exposure Limit (not to be exceeded at any time during a work day)

The table below lists the exposure limits recommended by OSHA and NIOSH for each of the listed compounds. Respiratory protection will be required if measured concentrations in air exceed the minimum of these exposure limits.

Recommended Exposure Limits

Compound	OSHA PEL [ppm]	NIOSH REL [ppm]	IDLH [ppm]	TWA [ppm]
Pentachlorophenol	0.05	0.05	0.25	0.05

Note: ppm = Parts per million.

Pentachlorophenol. Pentachlorophenol is a synthetic substance, made from other chemicals, and does not occur naturally in the environment. It is made by only one company in the United States. At one time, it was one of the most widely used biocides in the United States. Since 1984, the purchase and use of pentachlorophenol has been restricted to certified applicators. It is no longer available to the general public. Application of pentachlorophenol in the home as an herbicide and pesticide accounted for only 3% of its consumption in the 1970s. Before use restrictions, pentachlorophenol was widely used as a wood preservative. It is now used industrially as a wood preservative for power line poles, cross arms, fence posts, and the like. Pure pentachlorophenol exists as colorless crystals. It has a very sharp characteristic phenolic smell when hot but very little odor at room temperature. Most people can begin to smell pentachlorophenol in water at less than 12 parts pentachlorophenol per million parts of water (ppm). Impure pentachlorophenol (the form usually found at hazardous waste sites) is dark gray to brown and exists as dust, beads, or flakes. Pentachlorophenol can be found in two forms: pentachlorophenol itself or as the sodium salt of pentachlorophenol. The sodium salt dissolves easily in water, but pentachlorophenol does not. These two forms have some different physical properties, but are expected to have similar toxic effects. Humans are generally exposed to technical-grade pentachlorophenol, which usually contains such toxic impurities as polychlorinated dibenzo- p-dioxins and dibenzofurans.

The physical and chemical properties of the compound suggest that not much will evaporate into the atmosphere and that most of it will move with water and generally stick to soil particles. Movement of pentachlorophenol in soils depends on the soil's acidity. The compound can be present in fish or other species used for food, as demonstrated by the ongoing food monitoring program of the Food and Drug



Appendix A – Site-Specific Health and Safety Plan

Administration (FDA). In air, soil, and surface water, pentachlorophenol lasts for hours to days. The compound is broken down in soil and surface water by microorganisms, and in air and surface water by sunlight, to other compounds, some of which may be harmful to humans.

Pentachlorophenol easily enters your body through your lungs when you breathe it, through your digestive tract after you eat contaminated food or water, or through your skin. The most significant ways are through breathing and skin contact. After a short exposure period, pentachlorophenol quickly leaves your body (studies in humans show that half the amount taken in is usually gone within 33 hours). It does not seem to build up in the body very much. Most of the pentachlorophenol taken into your body does not break down, but instead leaves in your urine. Much smaller amounts leave in your feces. Only a small amount escapes through your exhaled air. Some of the pentachlorophenol taken into your body is joined with other natural chemicals that make the pentachlorophenol less harmful. The combined product can then leave your body more easily.

Some, but not all, of the harmful effects associated with exposure to pentachlorophenol are due to impurities present in commercial pentachlorophenol. Short exposures to large amounts of pentachlorophenol in the workplace or through the misuse of products that contain it can cause harmful effects on the liver, kidneys, blood, lungs, nervous system, immune system, and gastrointestinal tract. Contact with pentachlorophenol (particularly in the form of a hot vapor) can irritate the skin, eyes, and mouth. If large enough amounts enter the body, heat is produced by the cells in the body, causing an increase in body temperature. The body temperature can increase to dangerous levels, causing injury to various organs and tissues and even death. This effect is the result of exposure to pentachlorophenol itself and not the impurities. The lengths of exposure and the levels that cause harmful effects have not been well defined. Long-term exposure to low levels such as those that occur in the workplace can cause damage to the liver, kidneys, blood, and nervous system. Studies in animals also suggest that the endocrine system and immune system can also be damaged following long-term exposure to low levels of pentachlorophenol. All of these effects get worse as the level of exposure increases. Decreases in the number of newborn animals, harmful effects on reproductive organs of the mothers, decreases in the number of successful pregnancies, and increases in the length of pregnancy were observed in animals exposed to pentachlorophenol while they were pregnant. Harmful effects on reproductive organs of the females were also seen in animals exposed to pentachlorophenol while they were not pregnant. We do not know if pentachlorophenol produces all of the same effects in humans that it causes in animals.

An increased risk of cancer has been shown in some laboratory animals given large amounts of pentachlorophenol orally for a long time. There is weak evidence that pentachlorophenol causes cancer in humans. The International Agency for Research on Cancer (IARC) has determined that pentachlorophenol is possibly carcinogenic to humans, and the EPA has classified pentachlorophenol as a probable human carcinogen.



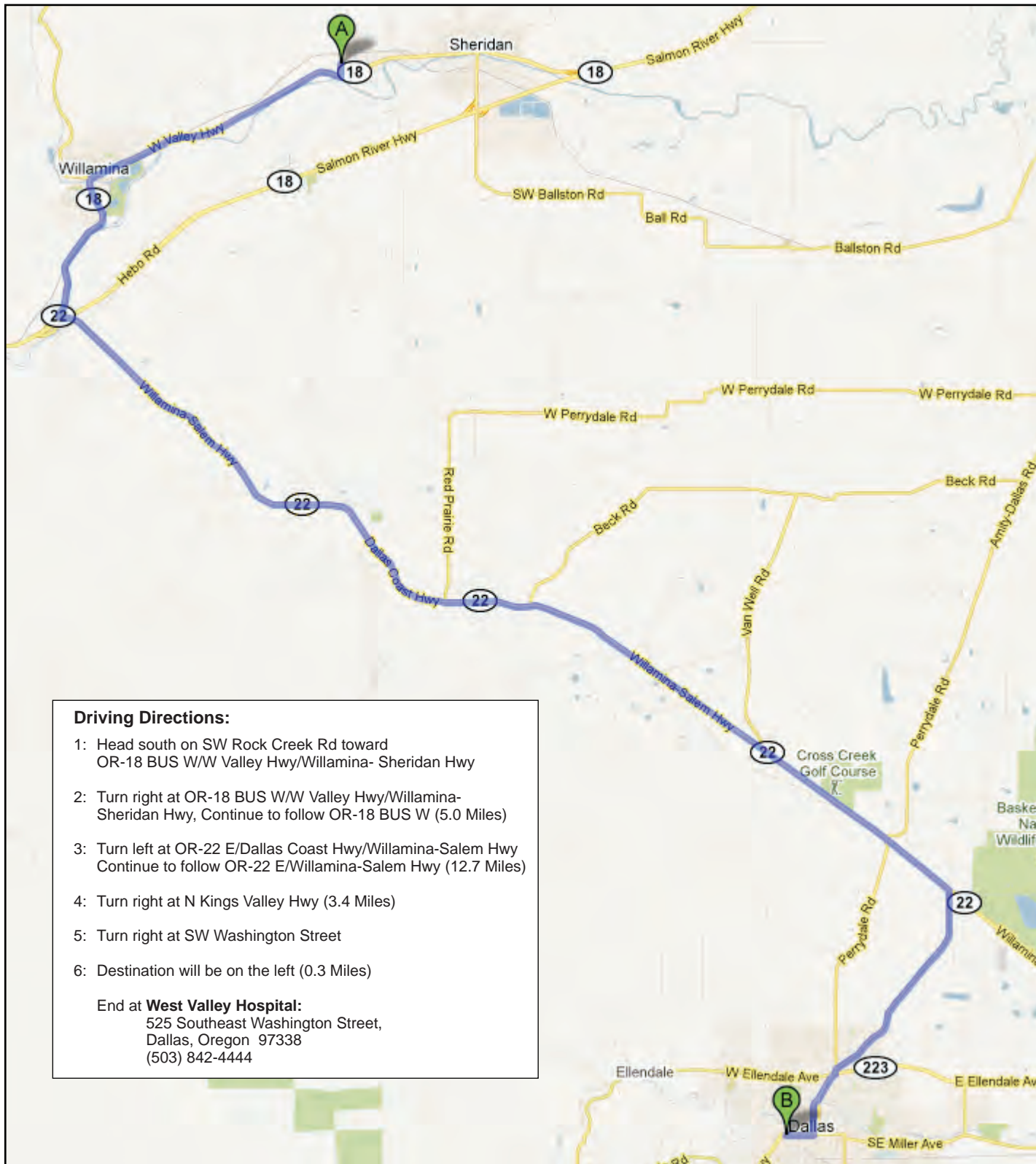
Appendix A – Site-Specific Health and Safety Plan

The federal government has set regulatory standards and guidelines to protect workers from the possible health effects of pentachlorophenol in air. OSHA has set a legally enforceable limit of 0.5 milligrams per cubic meter (mg/m³) in workroom air to protect workers during an 8-hour shift over a 40-hour work week.

Pentachlorophenol and its products can be measured in the blood, urine, and tissues of exposed persons. Because urine and blood samples are easily collected, testing these fluids is the best way to find out whether a person has been exposed. Neither test is usually available at a doctor's office because both require the use of special equipment. Although these tests can prove that a person has been exposed, they cannot be used to tell how severe any health effects might be. Because pentachlorophenol leaves the body fairly quickly, these tests are best for finding exposures that occurred within the last several days. Exposure at hazardous waste sites usually includes exposure to other organic compounds, such as hexachlorobenzene, that could break down into pentachlorophenol. On the other hand, measurement of blood and urine levels for pentachlorophenol and its products in groups of exposed people and non-exposed people is a good way to tell whether exposure to pentachlorophenol or members of the same chemical family occurred.

The federal government has also set regulatory standards and guidelines to protect the public from the possible health effects of pentachlorophenol in drinking water. EPA decided that the amount in the drinking water should not be more than 0.022 milligram per liter (mg/L) and that any release of more than 10 pounds to the environment should be reported. For short-term exposures, EPA decided that drinking water levels should not be more than 1.0 mg/L for 1 day or 0.3 mg/L for 10 days. EPA also estimates that for an average-weight adult, exposure to 0.03 mg/kg/day will probably not cause any non-cancer health effects. EPA is now working to measure the levels of pentachlorophenol found at abandoned waste sites.





Driving Directions:

- 1: Head south on SW Rock Creek Rd toward OR-18 BUS W/W Valley Hwy/Willamina- Sheridan Hwy
- 2: Turn right at OR-18 BUS W/W Valley Hwy/Willamina-Sheridan Hwy, Continue to follow OR-18 BUS W (5.0 Miles)
- 3: Turn left at OR-22 E/Dallas Coast Hwy/Willamina-Salem Hwy Continue to follow OR-22 E/Willamina-Salem Hwy (12.7 Miles)
- 4: Turn right at N Kings Valley Hwy (3.4 Miles)
- 5: Turn right at SW Washington Street
- 6: Destination will be on the left (0.3 Miles)

End at **West Valley Hospital:**

525 Southeast Washington Street,
Dallas, Oregon 97338
(503) 842-4444

N



Base map prepared from 2011 Google Map data.

Route to Hospital

Groundwater Monitoring Work Plan
Former Taylor Lumber Site
Sheridan, Oregon



Ash Creek Associates, Inc.
Environmental and Geotechnical Consultants

Project Number 1843-00

April 2011

Figure

HSP-1

Appendix B

Safety and Analysis Plan

1.0 Introduction

This appendix presents the field and sampling procedures and the analytical testing program that will be used to complete the field and analytical work for this project. Quality assurance and quality control (QA/QC) procedures are also discussed in this appendix.

2.0 Field and Sampling Procedures

The scope of work for the Site includes two annual groundwater monitoring events. The field and sampling procedures include the following:

- Preparatory activities;
- Well headspace measurements with a photoionization detector (PID);
- Groundwater elevation measurements;
- Collection of groundwater samples;
- Sample management (i.e., containers, storage, and shipment);
- Decontamination procedures; and
- Handling of investigation-derived waste (IDW).

2.1 Preparatory Activities

Site Health and Safety Plan. A Site-specific health and safety plan (HASP) has been prepared for the proposed activities. Appendix A of the Work Plan includes a copy of the HASP. The HASP was prepared in general accordance with the Occupational Safety and Health Act (OSHA) and the Oregon Administrative Rules (OAR). A copy of the HASP will be maintained on site during the field activities.

Property Access. PWPO will be contacted a minimum of one week prior to each field event. Prior to entering the site, field staff will also check in at the PWPO main office. The main office is located at 22125 Rock Creek Road, with the primary entrance located off Highway 18B.

Residential Notifications. One monitoring well (MW-9S) and two residential water wells (RW-01 and RW-02) are located off site as shown on Figure 2. The owners of these properties will be notified a minimum of one week prior to sampling. Contact information for the residents is provided in the EPA Work Plan (EPA, 2010).



Appendix B – Sampling and Analysis Plan

2.2 PID Headspace Measurements

Prior to sampling, the headspace around each well will be screened for organic vapors using a photoionization detector (PID). Headspace concentrations will be documented in the field notes and any volatiles will be allowed to dissipate before sampling.

2.3 Groundwater Elevation Measurements

Water level measurements will be collected in general accordance with Ash Creek's Standard Operating Procedure (SOP) 2.16 for water level measurement procedures, provided in this appendix. The referenced SOP is in agreement with water level measurement procedures outlined in the EPA Work Plan (EPA, 2010). Water level measurements will be collected from site wells at the beginning of the monitoring event. Well covers and well caps will be opened and the water level will be allowed to equilibrate under atmospheric conditions for at least five minutes before water level measurements are taken. Water level measurements will be recorded in the field notes.

2.4 Collection of Groundwater Samples

Ash Creek will collect groundwater samples from site monitoring wells and off-site water wells annually in accordance with low-flow sampling techniques described in SOP 2.5, included in this appendix. The referenced SOP is in agreement with groundwater sampling procedures outlined in the EPA Work Plan (EPA, 2010). Groundwater samples will be collected using dedicated tubing and a peristaltic pump. A minimum of three casing volumes will be purged prior to sampling. During purging, field parameters will be collected using a flow-through-cell after each purge volume. Purging will be considered complete when water quality parameters including pH, electrical conductivity, and temperature stabilize within 10 percent of the previous measurement and turbidity readings are less than 5 to 15 nephelometric turbidity units (NTU). Sample containers will be provided by the laboratory ready for sample collection.

When sampling residential wells with water taps, the taps will be opened and allowed to run for approximately 10 minutes to clear the system (including a pressure equalizing tank, if present) of residual water in the piping. Following the system purge, a sample will be collected from the tap for measurement of field parameters. The tap will be allowed to run for another three minutes before collecting another sample for the measurement of field parameters (pH, electrical conductivity, temperature). This procedure will be repeated until field parameters stabilized to within 10 percent of the previous measurements for three successive measurements. Following completion of "purging" procedures as described above, the groundwater sample will be collected directly from the tap. Sample containers will be provided by the laboratory ready for sample collection.



Appendix B – Sampling and Analysis Plan

2.5 Sample Management

Containers. Clean sample containers will be provided by the analytical laboratory ready for sample collection (the container requirements are listed in Table B-1).

Labeling Requirements. A sample label will be affixed to each sample container before sample collection. All containers will be marked with the project name, sample I.D. (unique I.D. for each sample location), date and time stamp (military time) of collection, sampler's initials, and the type of analysis.

Sample Storage and Shipment. Soil samples will be stored in a cooler chilled with ice or blue ice to 4 degrees Celsius (°C). The cooler lid will be sealed with chain-of-custody seals. If necessary, the samples will be sent via overnight courier to the analytical laboratory for chemical analysis. Otherwise, Ash Creek will transport the containers to the laboratory. Chain of custody will be maintained and documented at all times.

2.6 Decontamination Procedures

Personnel Decontamination. Personnel decontamination procedures depend on the level of protection specified for a given activity. The HASP (Appendix A) identifies the appropriate level of protection for the type of work and expected field conditions associated with this project. In general, clothing and other protective equipment can be removed from the investigation area. Field personnel should thoroughly wash their hands and faces at the end of each day and before taking any work breaks.

Sampling Equipment Decontamination. To prevent cross-contamination between sampling events, clean, dedicated sampling equipment (e.g., groundwater sampling tubing) will be used for each sampling event and will be discarded after use. Cleaning of non-disposable items (i.e., field meter and water level probe) will consist of washing in a detergent (Alconox®) solution, rinsing with tap water, followed by a de-ionized (DI) water rinse. Decontamination water will be collected and handled in accordance with Section 2.9.

2.7 Handling of Investigation-Derived Waste

IDW will consist of purge water and decontamination water. IDW will be temporarily placed in five-gallon buckets and covered with a lid. Throughout the sampling event, the buckets will be emptied into the facility drain located at the southeast corner of the site for treatment at the on-site stormwater treatment system (Figure 2 of Work Plan). At a minimum, buckets will be emptied into the drain by the end of each field day.

Disposable items, such as sample tubing, gloves, protective overalls (e.g., Tyvek®), paper towels, etc., will be placed in plastic bags after use and deposited in trash receptacles for disposal.



Appendix B – Sampling and Analysis Plan

3.0 Analytical Testing Program

Analytical laboratory QA/QC procedures are discussed in Section 5 of this appendix.

Table B-2 lists the proposed analytical methods, detection limit goals, and lists the anticipated number of groundwater samples. Samples will be collected and handled using methods described in Section 2 of this appendix. Specific container and storage requirements for samples will be discussed with the analytical laboratory prior to sample collection and will be in accordance with the container requirements presented in Table B-2.

The contaminant of concern (COC) for this project is pentachlorophenol; groundwater samples will be analyzed for pentachlorophenol by EPA Method 8270 SIM.

4.0 Field Quality Assurance Program

Field Chain-of-Custody. A chain-of-custody form will be used to record possession of a sample and to document analyses requested. Each time the sample bottles or samples are transferred between individuals, both the sender and receiver sign and date the chain-of-custody form. When a sample shipment is transported to the laboratory, a copy of the chain-of-custody form is included in the transport container (e.g., ice chest).

Field Duplicate Samples. Two field duplicate groundwater samples will be collected during each annual sampling event. Field duplicates will consist of two samples collected sequentially from one sample location to assess data variability. The field duplicates will be analyzed by the same analytical methods used for primary samples. Relative percent differences (RPDs) for field duplicates will be calculated to assess the data precision and accuracy and potential variability caused by sample handling.

Trip Blank. Trip blanks will not be necessary for this investigation as samples will not be analyzed for volatile constituents.

Field Blanks and Equipment Rinse Blanks. Field blanks and equipment rinse blanks are not necessary because the sample tubing is dedicated to each well.

5.0 Quality Assurance and Quality Control

Laboratory QA/QC. The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of data quality indicators, including laboratory-specific detection limits, instrument calibration, calibration verification, blanks, surrogate recoveries, duplicates, matrix spike (MS) recoveries, matrix spike duplicate (MSD) recoveries, blank spike recoveries, and blank spike duplicate recoveries, to evaluate the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of



Appendix B – Sampling and Analysis Plan

the test methods. QA/QC requirements are also detailed in the EPA Work Plan (EPA, 2010). Parameters for determining sensitivity, accuracy, and precision for pentachlorophenol are provided in the EPA Work Plan (Table 4, EPA, 2010).

Field QA/QC. Field duplicates and MS/MSD samples will be submitted to the laboratory as part of the field QA/QC program. The sample, sample duplicate, and the MS/MSD samples will be taken from the same sample location, if possible. A summary of QC samples are provided in Table B-3.

Instrument Calibration. Field instruments, including the water level probe and PID, will be calibrated daily prior to use. PID calibration procedures are summarized in SOP 2.1, provided in this appendix. Instruments will otherwise be calibrated in accordance with the manufacturer's specifications. Additional instructions for field equipment inspection, maintenance, and decontamination are provided in Section 3.0 of the EPA Work Plan (EPA, 2010).

6.0 Documentation

During groundwater monitoring activities at the site, field activities will be documented in the field notebook or on field data sheets. The following information will be documented in the field notebook:

- Daily time of arrival and departure from site
- Project personnel on site
- Equipment calibration records
- Health and safety monitoring records
- Summary of equipment present and equipment used
- Documentation of site visitors, their associations, and purpose of visit

The following information will be recorded on the field data sheets:

- Instrument calibration data
- Water levels
- Purge volumes
- Field measurements
- Sampling information
- IDW volumes
- Shipping information



Table B-1 - Analytical Methods - Sample Container and Preservation Requirements
 Former Taylor Lumber Project, DEQ Task Order No. 57-08-28
 Sheridan, Oregon

Groundwater Analysis	Method	Container	Preservative	Storage Temperature	Holding Time
Pentachlorophenol	EPA 8270 SIM	(2) 1-L Amber Glass per Sample	N/A	4°C	7 days

Notes:

1. EPA = U.S. Environmental Protection Agency.
2. °C = Degrees Celsius.
3. L = Liter.
4. N/A = not applicable.
5. SIM = Low level analysis.

Table B-2 - Analytical Methods, Anticipated Sample Number, and Reporting Limit Goals
 Former Taylor Lumber Project, DEQ Task Order No. 57-08-28
 Sheridan, Oregon

Analyte	Analytical Method	Anticipated Number of Samples (per event)	Reporting Limit Goal (µg/L)
Pentalchlorophenol	EPA 8270 SIM*	21	1

Notes:

1. µg/L = Micrograms per liter.
2. EPA = U.S. Environmental Protection Agency.
3. Chain-of-Custody should denote analysis as "SV8270 Acid(PCP Low Level Only)"

Table B-3 - Summary of Quality Control Samples
Former Taylor Lumber Project, DEQ Task Order No. 57-08-28
Sheridan, Oregon

Parameter	Method	Field Duplicates	MS/MSD	Field Blanks	Equipment Blanks	Trip Blanks
Pentachlorophenol *	EPA 8270 SIM	2	1/1	0	0	0

Notes:

1. EPA = Environmental Protection Agency
2. MS/MSD = Matrix Spike/Matrix Spike Duplicate.
3. * = Where possible, a sample, sample duplicate, and MS/MSD sample should be taken from the same location.
4. For MS/MSD samples, one 1-L Amber bottle is required. If sufficient volume is available, collect 2 1-L amber bottles to ensure against potential breakage.
5. For field duplicates, sample volume collected should be doubled (4-1 L Ambers per duplicate well).

Appendix C

Oregon Laboratory Certification, Laboratory Analytical Report and Data Quality Review

Appendix C – Laboratory Analytical Report and Data Quality Review

This appendix documents the results of a quality assurance/quality control (QA/QC) review of the analytical data for samples collected in April 2012 for the Oregon Department of Environmental Quality (DEQ) Taylor Lumber and Treating Superfund site. Groundwater samples were analyzed by ESC Lab Sciences (ESC) of Mt Juliet, Tennessee. Copies of the analytical laboratory reports are included in this appendix.

The QA review included examination and validation of the laboratory summary reports, including:

- Analytical methods;
- Detection limits;
- Sample holding times;
- Surrogates, spikes, and blanks; and
- Sample replicates and other field quality assurance samples.

The QA review did not include a review of raw data.

1.0 Analytical Methods

Groundwater samples were analyzed for pentachlorophenol (PCP) by EPA Method 8270 (Low Level, PCP only).

2.0 Quality Assurance Review

The following criteria were evaluated in the standard data quality review process:

- Holding times;
- Method blanks;
- Surrogate recoveries;
- Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries; and
- Matrix spike/matrix spike duplicate (MS/MSD) recoveries; and
- Laboratory duplicate and relative percent difference (RPD).

Based on this review, data are considered to be of acceptable quality and are suitable for their intended purposes.

Holding Times. Samples were analyzed within the holding times specified.

Method Blanks. A method – or laboratory – blank is a sample prepared in the laboratory along with the actual samples and analyzed for the same parameters at the same time. It is used to assess if detected



Appendix C – Laboratory Analytical Report and Data Quality Review

contaminants may be the result of contamination of the samples in the laboratory. PCP was not detected in the laboratory method blanks.

Surrogate Recovery. Surrogates are organic compounds that are similar in chemical composition to the analytes of interest and spiked into environmental and batch QC samples prior to sample preparation and analysis. Surrogate recoveries for environmental samples are used to evaluate matrix interference on a sample-specific basis. Surrogate recoveries were within control limits for all surrogates associated with PCP analysis.

Laboratory Control Sample and Laboratory Control Sample Duplicate. LCS/LCSD are analyzed by the laboratory to assess the accuracy of the analytical equipment. An LCS/LCSD sample is prepared from an analyte-free matrix that is then spiked with known levels of the constituents of interest (i.e., a standard). The concentrations are measured and the results are compared to the known spiked levels. This comparison is expressed as percent recovery. The RPD between the LCS and LCSD is calculated. The project samples were analyzed in three batches with one LCS and LCSD sample analyzed with each batch. For two of the three batches the LCS was within control limits and the TPD between the LCS and LCSD samples were within acceptable limits. In the third batch, which included project samples MW-1S, MW-15S and MW-24S, the LCS was below acceptable limits and thus the RPD between the LCS and LCSD was also outside of acceptable limits. Samples MW-1S, MW-15S and MW-24S have been flagged with a J3 qualifier indicating the LCS was outside acceptable limits and with a J4 qualifier, indicating the RPD between the LCS and LCSD was outside acceptable limits.

Matrix Spike and Matrix Spike Duplicate Analyses. MS/MSD analysis involves two aliquots of an environmental sample that are spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. These analyses are used to assess the potential for matrix interference with recovery or detection of the constituents of interest and the accuracy of the determination. The RPD between the MS and MSD is calculated. An MS/MSD sample was collected from monitoring well MW-06S in accordance with the work plan, which indicated that the sample, sample duplicate, and MS/MSD samples all be collected from the same sample location. The laboratory inadvertently did not analyze the MS/MSD samples. When the analytical results were reported, and the mistake was noted, the MS/MSD samples were already out of acceptable hold times and could not be analyzed.

To avoid omitting the MS/MSD sample in future laboratory sample batches, the laboratory will be contacted within 48 hours of sample receipt to verify that the MS/MSD samples were included (and analyzed) in the sample batch. If the MS/MSD samples are inadvertently omitted, there will still be ample time to analyze the samples within acceptable hold times for the PCP analysis.



Appendix C – Laboratory Analytical Report and Data Quality Review

Field Duplicate. A field duplicate is a second field sample collected from a selected sample location. Field duplicate samples serve as a check on laboratory quality as well as potential variability of the sample matrix. The field duplicate is analyzed and compared to the first sample to assess the precision of the analytical method. This comparison can be expressed by the RPD between the original and duplicate samples. The field duplicate samples were collected from well MW-6S and MW-16S. RPDs were below 10 percent and therefore within quality control limits.

Reporting Limits. Reporting limits, reported as reported detection limit (RDL) on the laboratory report, were not elevated in the project groundwater samples.

Conclusion. With the exception of samples MW-1S, MW-15S and MW-24S, the associated batch LCS samples indicate that the accuracy of the analysis was acceptable. Surrogate recoveries are another indicator of the accuracy of an analysis. The surrogate sample recoveries associated with samples MW-1S, MW-15S and MW-24S were within acceptable limits, indicating that the accuracy of the analysis was acceptable.

The RPD between the LCS and LCSD samples is an indicator that the precision of the analysis was acceptable. As noted in the section above, the RPD between the LCS/RCSD was out of recovery limits for the QC batch associated with samples MW-1S, MW-15S and MW-24S. The analytical results for pentachlorophenol for the three samples were consistent with the 2011 monitoring event, suggesting that the precision of the analysis was acceptable. Furthermore, field duplicate samples associated with the sample event also indicate that the laboratory results were acceptable. In conclusion, the QA objectives have been met, and the data are of sufficient quality for use in this project.





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Mt. Juliet, TN 37122
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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Stephanie Bosze
Oregon Dept. of Env. Quality - ODEQ
3150 NW 229th St., Suite 150
Hillsboro, OR 97124

Report Summary

Friday April 27, 2012

Report Number: L569897

Samples Received: 04/13/12

Client Project: 1843-00

Description: Taylor Lumber

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jayred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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Stephanie Bosze
Oregon Dept. of Env. Quality - ODEQ
3150 NW 229th St., Suite 150
Hillsboro, OR 97124

Case Narrative

Friday April 27, 2012

Report Number: L569897

Samples Received: 04/13/12

Client Project: 1843-00

Description: Taylor Lumber

Other Comments

The workgroup LCS associated with the 8270PCP analysis on L569897-02, -11, and -21 had good recoveries for the target Acid compounds and surrogate, but the LCSD had low recovery for the Acid targets including the surrogate. The samples also had good recovery for Acid surrogates. The samples are flagged accordingly.



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REPORT OF ANALYSIS

Stephanie Bosze
Oregon Dept. of Env. Quality - ODEQ
3150 NW 229th St., Suite 150
Hillsboro, OR 97124

April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : PZ-105

Collected By : Michael Whitson
Collection Date : 04/10/12 09:45

ESC Sample # : L569897-01

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	31.9			% Rec.		8270 C	04/16/12	1
Phenol-d5	28.8			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	59.4			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	63.2			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	55.7			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	80.1			% Rec.		8270 C	04/16/12	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 04/23/12 14:59 Revised: 04/27/12 15:40



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Mt. Juliet, TN 37122
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Est. 1970

REPORT OF ANALYSIS

Stephanie Bosze
Oregon Dept. of Env. Quality - ODEQ
3150 NW 229th St., Suite 150
Hillsboro, OR 97124

April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-15S

Collected By : Michael Whitson
Collection Date : 04/10/12 10:45

ESC Sample # : L569897-02

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	15.	0.41	1.0	ug/l	J4J3V9	8270 C	04/18/12	1
Surrogate Recovery								
2-Fluorophenol	28.8			% Rec.		8270 C	04/18/12	1
Phenol-d5	23.0			% Rec.		8270 C	04/18/12	1
Nitrobenzene-d5	67.2			% Rec.		8270 C	04/18/12	1
2-Fluorobiphenyl	74.8			% Rec.		8270 C	04/18/12	1
2,4,6-Tribromophenol	22.4			% Rec.		8270 C	04/18/12	1
p-Terphenyl-d14	88.4			% Rec.		8270 C	04/18/12	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Stephanie Bosze
Oregon Dept. of Env. Quality - ODEQ
3150 NW 229th St., Suite 150
Hillsboro, OR 97124

April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-16S

Collected By : Michael Whitson
Collection Date : 04/10/12 11:45

ESC Sample # : L569897-03

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	5.8	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	23.1			% Rec.		8270 C	04/16/12	1
Phenol-d5	24.7			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	68.3			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	74.0			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	36.4			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	89.4			% Rec.		8270 C	04/16/12	1

U = ND (Not Detected)

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REPORT OF ANALYSIS

Stephanie Bosze
Oregon Dept. of Env. Quality - ODEQ
3150 NW 229th St., Suite 150
Hillsboro, OR 97124

April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-16S DUP

Collected By : Michael Whitson
Collection Date : 04/10/12 11:45

ESC Sample # : L569897-04

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	8.7	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	41.8			% Rec.		8270 C	04/16/12	1
Phenol-d5	35.2			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	81.0			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	88.1			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	75.8			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	105.			% Rec.		8270 C	04/16/12	1

U = ND (Not Detected)

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3150 NW 229th St., Suite 150
Hillsboro, OR 97124

April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : PZ-102

Collected By : Michael Whitson
Collection Date : 04/10/12 13:05

ESC Sample # : L569897-05

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	13.2			% Rec.		8270 C	04/16/12	1
Phenol-d5	12.9			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	37.9			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	46.7			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	20.6			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	61.4			% Rec.		8270 C	04/16/12	1

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3150 NW 229th St., Suite 150
Hillsboro, OR 97124

April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-13S

Collected By : Michael Whitson
Collection Date : 04/10/12 14:15

ESC Sample # : L569897-06

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	16.2			% Rec.		8270 C	04/16/12	1
Phenol-d5	10.9			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	55.1			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	63.5			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	45.5			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	78.4			% Rec.		8270 C	04/16/12	1

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April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-12S

Collected By : Michael Whitson
Collection Date : 04/10/12 15:20

ESC Sample # : L569897-07

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	28.3			% Rec.		8270 C	04/16/12	1
Phenol-d5	22.0			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	49.4			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	53.7			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	44.7			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	69.6			% Rec.		8270 C	04/16/12	1

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April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-06S

Collected By : Michael Whitson
Collection Date : 04/10/12 16:30

ESC Sample # : L569897-08

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	16.9			% Rec.		8270 C	04/16/12	1
Phenol-d5	18.5			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	45.3			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	57.6			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	18.1			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	80.9			% Rec.		8270 C	04/16/12	1

U = ND (Not Detected)

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MDL = Minimum Detection Limit = LOD = SQL(TRRP)

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April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-06S DUP

Collected By : Michael Whitson
Collection Date : 04/10/12 16:30

ESC Sample # : L569897-09

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	27.6			% Rec.		8270 C	04/16/12	1
Phenol-d5	23.3			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	40.2			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	46.6			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	36.5			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	64.9			% Rec.		8270 C	04/16/12	1

U = ND (Not Detected)

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April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-06D

Collected By : Michael Whitson
Collection Date : 04/10/12 17:25

ESC Sample # : L569897-10

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	13.3			% Rec.		8270 C	04/16/12	1
Phenol-d5	14.5			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	53.9			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	62.1			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	29.6			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	85.6			% Rec.		8270 C	04/16/12	1

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April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-1S

Collected By : Michael Whitson
Collection Date : 04/10/12 18:45

ESC Sample # : L569897-11

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l	J4J3V9	8270 C	04/18/12	1
Surrogate Recovery								
2-Fluorophenol	30.7			% Rec.		8270 C	04/18/12	1
Phenol-d5	24.7			% Rec.		8270 C	04/18/12	1
Nitrobenzene-d5	74.7			% Rec.		8270 C	04/18/12	1
2-Fluorobiphenyl	82.0			% Rec.		8270 C	04/18/12	1
2,4,6-Tribromophenol	40.4			% Rec.		8270 C	04/18/12	1
p-Terphenyl-d14	92.0			% Rec.		8270 C	04/18/12	1

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April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-25S

Collected By : Michael Whitson
Collection Date : 04/11/12 09:15

ESC Sample # : L569897-12

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	200	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	19.8			% Rec.		8270 C	04/16/12	1
Phenol-d5	14.4			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	35.6			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	39.4			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	42.4			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	66.1			% Rec.		8270 C	04/16/12	1

U = ND (Not Detected)

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April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-9S

Collected By : Michael Whitson
Collection Date : 04/11/12 09:55

ESC Sample # : L569897-13

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	38.3			% Rec.		8270 C	04/16/12	1
Phenol-d5	33.2			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	46.7			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	55.6			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	61.5			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	84.6			% Rec.		8270 C	04/16/12	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

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April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-103S

Collected By : Michael Whitson
Collection Date : 04/11/12 10:55

ESC Sample # : L569897-14

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	1.4	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	9.60			% Rec.		8270 C	04/16/12	1
Phenol-d5	15.0			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	47.6			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	54.3			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	14.9			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	92.6			% Rec.		8270 C	04/16/12	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

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April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-20S

Collected By : Michael Whitson
Collection Date : 04/11/12 12:15

ESC Sample # : L569897-15

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	20.4			% Rec.		8270 C	04/16/12	1
Phenol-d5	15.4			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	46.9			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	57.1			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	54.0			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	77.1			% Rec.		8270 C	04/16/12	1

U = ND (Not Detected)

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April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-19S

Collected By : Michael Whitson
Collection Date : 04/11/12 13:30

ESC Sample # : L569897-16

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	32.9			% Rec.		8270 C	04/16/12	1
Phenol-d5	29.0			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	60.1			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	71.3			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	56.3			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	98.1			% Rec.		8270 C	04/16/12	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Stephanie Bosze
Oregon Dept. of Env. Quality - ODEQ
3150 NW 229th St., Suite 150
Hillsboro, OR 97124

April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : PZ-101

Collected By : Michael Whitson
Collection Date : 04/11/12 14:45

ESC Sample # : L569897-17

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/19/12	1
Surrogate Recovery								
2-Fluorophenol	25.6			% Rec.		8270 C	04/19/12	1
Phenol-d5	22.3			% Rec.		8270 C	04/19/12	1
Nitrobenzene-d5	43.9			% Rec.		8270 C	04/19/12	1
2-Fluorobiphenyl	48.7			% Rec.		8270 C	04/19/12	1
2,4,6-Tribromophenol	48.7			% Rec.		8270 C	04/19/12	1
p-Terphenyl-d14	65.3			% Rec.		8270 C	04/19/12	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 04/23/12 14:59 Revised: 04/27/12 15:40



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REPORT OF ANALYSIS

Stephanie Bosze
Oregon Dept. of Env. Quality - ODEQ
3150 NW 229th St., Suite 150
Hillsboro, OR 97124

April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-11S

Collected By : Michael Whitson
Collection Date : 04/11/12 16:00

ESC Sample # : L569897-18

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/19/12	1
Surrogate Recovery								
2-Fluorophenol	18.7			% Rec.		8270 C	04/19/12	1
Phenol-d5	12.0			% Rec.		8270 C	04/19/12	1
Nitrobenzene-d5	43.8			% Rec.		8270 C	04/19/12	1
2-Fluorobiphenyl	51.1			% Rec.		8270 C	04/19/12	1
2,4,6-Tribromophenol	39.6			% Rec.		8270 C	04/19/12	1
p-Terphenyl-d14	72.6			% Rec.		8270 C	04/19/12	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:

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Oregon Dept. of Env. Quality - ODEQ
3150 NW 229th St., Suite 150
Hillsboro, OR 97124

April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : RW-01

Collected By : Michael Whitson
Collection Date : 04/11/12 16:40

ESC Sample # : L569897-19

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/19/12	1
Surrogate Recovery								
2-Fluorophenol	25.8			% Rec.		8270 C	04/19/12	1
Phenol-d5	22.4			% Rec.		8270 C	04/19/12	1
Nitrobenzene-d5	35.0			% Rec.		8270 C	04/19/12	1
2-Fluorobiphenyl	43.6			% Rec.		8270 C	04/19/12	1
2,4,6-Tribromophenol	37.0			% Rec.		8270 C	04/19/12	1
p-Terphenyl-d14	58.7			% Rec.		8270 C	04/19/12	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:

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Stephanie Bosze
Oregon Dept. of Env. Quality - ODEQ
3150 NW 229th St., Suite 150
Hillsboro, OR 97124

April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-10S

Collected By : Michael Whitson
Collection Date : 04/11/12 17:30

ESC Sample # : L569897-20

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l		8270 C	04/16/12	1
Surrogate Recovery								
2-Fluorophenol	35.9			% Rec.		8270 C	04/16/12	1
Phenol-d5	29.6			% Rec.		8270 C	04/16/12	1
Nitrobenzene-d5	42.3			% Rec.		8270 C	04/16/12	1
2-Fluorobiphenyl	54.5			% Rec.		8270 C	04/16/12	1
2,4,6-Tribromophenol	62.0			% Rec.		8270 C	04/16/12	1
p-Terphenyl-d14	72.9			% Rec.		8270 C	04/16/12	1

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MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:

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3150 NW 229th St., Suite 150
Hillsboro, OR 97124

April 27, 2012

Date Received : April 13, 2012
Description : Taylor Lumber

Sample ID : MW-24S

Collected By : Michael Whitson
Collection Date : 04/11/12 18:25

ESC Sample # : L569897-21

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.41	1.0	ug/l	J4J3V9	8270 C	04/18/12	1
Surrogate Recovery								
2-Fluorophenol	31.0			% Rec.		8270 C	04/18/12	1
Phenol-d5	23.3			% Rec.		8270 C	04/18/12	1
Nitrobenzene-d5	74.3			% Rec.		8270 C	04/18/12	1
2-Fluorobiphenyl	83.8			% Rec.		8270 C	04/18/12	1
2,4,6-Tribromophenol	58.9			% Rec.		8270 C	04/18/12	1
p-Terphenyl-d14	105.			% Rec.		8270 C	04/18/12	1

U = ND (Not Detected)

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MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L569897-02	WG588224	SAMP	Pentachlorophenol	R2136534	J4J3V9
L569897-11	WG588224	SAMP	Pentachlorophenol	R2136534	J4J3V9
L569897-21	WG588224	SAMP	Pentachlorophenol	R2136534	J4J3V9

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
V9	(ESC) - Additional QC Info: Please refer to the Case Narrative provided with the report.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.



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Level II

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Pentachlorophenol	< .001	mg/l			WG587690	04/16/12 02:19
2,4,6-Tribromophenol		% Rec.	81.50	16-147	WG587690	04/16/12 02:19
2-Fluorobiphenyl		% Rec.	78.75	29-127	WG587690	04/16/12 02:19
2-Fluorophenol		% Rec.	45.88	10-75	WG587690	04/16/12 02:19
Nitrobenzene-d5		% Rec.	57.43	17-119	WG587690	04/16/12 02:19
Phenol-d5		% Rec.	33.47	10-63	WG587690	04/16/12 02:19
p-Terphenyl-d14		% Rec.	80.14	40-174	WG587690	04/16/12 02:19
Pentachlorophenol	< .001	mg/l			WG587974	04/18/12 16:34
2,4,6-Tribromophenol		% Rec.	41.48	16-147	WG587974	04/18/12 16:34
2-Fluorobiphenyl		% Rec.	48.30	29-127	WG587974	04/18/12 16:34
2-Fluorophenol		% Rec.	38.79	10-75	WG587974	04/18/12 16:34
Nitrobenzene-d5		% Rec.	42.78	17-119	WG587974	04/18/12 16:34
Phenol-d5		% Rec.	30.02	10-63	WG587974	04/18/12 16:34
p-Terphenyl-d14		% Rec.	64.02	40-174	WG587974	04/18/12 16:34
Pentachlorophenol	< .001	mg/l			WG588224	04/18/12 18:04
2,4,6-Tribromophenol		% Rec.	58.41	16-147	WG588224	04/18/12 18:04
2-Fluorobiphenyl		% Rec.	64.98	29-127	WG588224	04/18/12 18:04
2-Fluorophenol		% Rec.	39.79	10-75	WG588224	04/18/12 18:04
Nitrobenzene-d5		% Rec.	57.82	17-119	WG588224	04/18/12 18:04
Phenol-d5		% Rec.	28.34	10-63	WG588224	04/18/12 18:04
p-Terphenyl-d14		% Rec.	72.64	40-174	WG588224	04/18/12 18:04

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Pentachlorophenol	mg/l	.01	0.00584	58.4	10-128	WG587690
2,4,6-Tribromophenol				87.28	16-147	WG587690
2-Fluorobiphenyl				72.86	29-127	WG587690
2-Fluorophenol				36.48	10-75	WG587690
Nitrobenzene-d5				56.39	17-119	WG587690
Phenol-d5				29.87	10-63	WG587690
p-Terphenyl-d14				73.00	40-174	WG587690
Pentachlorophenol	mg/l	.01	0.00230	23.0	10-128	WG587974
2,4,6-Tribromophenol				37.18	16-147	WG587974
2-Fluorobiphenyl				37.09	29-127	WG587974
2-Fluorophenol				28.94	10-75	WG587974
Nitrobenzene-d5				35.26	17-119	WG587974
Phenol-d5				23.42	10-63	WG587974
p-Terphenyl-d14				50.20	40-174	WG587974
Pentachlorophenol	mg/l	.01	0.00574	57.4	10-128	WG588224
2,4,6-Tribromophenol				80.85	16-147	WG588224
2-Fluorobiphenyl				73.60	29-127	WG588224
2-Fluorophenol				43.11	10-75	WG588224
Nitrobenzene-d5				67.25	17-119	WG588224
Phenol-d5				31.15	10-63	WG588224
p-Terphenyl-d14				84.00	40-174	WG588224

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Pentachlorophenol	mg/l	0.00595	0.00584	59.0	10-128	1.82	40	WG587690

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Analyte	Laboratory Control Sample Duplicate				Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
2,4,6-Tribromophenol				88.48	16-147			
2-Fluorobiphenyl				79.83	29-127			
2-Fluorophenol				43.79	10-75			
Nitrobenzene-d5				63.45	17-119			
Phenol-d5				31.98	10-63			
p-Terphenyl-d14				82.32	40-174			
Pentachlorophenol	mg/l	0.00255	0.00230	26.0	10-128	10.2	40	WG587974
2,4,6-Tribromophenol				49.84	16-147			WG587974
2-Fluorobiphenyl				48.06	29-127			WG587974
2-Fluorophenol				33.11	10-75			WG587974
Nitrobenzene-d5				44.96	17-119			WG587974
Phenol-d5				25.77	10-63			WG587974
p-Terphenyl-d14				59.76	40-174			WG587974
Pentachlorophenol	mg/l	0	0.00574	0*	10-128	200.*	40	WG588224
2,4,6-Tribromophenol				1.720*	16-147			WG588224
2-Fluorobiphenyl				74.55	29-127			WG588224
2-Fluorophenol				1.550*	10-75			WG588224
Nitrobenzene-d5				68.77	17-119			WG588224
Phenol-d5				9.880*	10-63			WG588224
p-Terphenyl-d14				87.71	40-174			WG588224

Batch number /Run number / Sample number cross reference

WG587690: R2123373: L569897-01 03 04 05 06 07 08 09 10 12 13 14 15 16 20
WG587974: R2130374: L569897-17 18 19
WG588224: R2136534: L569897-02 11 21

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

OREGONDEQ - State of Oregon Sample Chain of Custody - OREGONDEQ

Page 1 of 2

Agency, Authorized Purchaser or Agent: Ash Creek Associates for ODEQ	Contract Laboratory Name: Lab Batch #: Contract # 8903	Lab Selection Criteria: <input type="checkbox"/> Proximity (if TAT < 48 hrs) <input type="checkbox"/> Prior work on same project <input type="checkbox"/> Cost (for anticipated analyses) <input type="checkbox"/> Other labs disqualified or unable to perform requested services <input type="checkbox"/> Emergency work	Turn Around Time: <input checked="" type="checkbox"/> 10 days (std.) <input type="checkbox"/> 5 days <input type="checkbox"/> 72 hours <input type="checkbox"/> 48 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Other
Send Lab Report To: Stephanie Bosze - Ash Creek Address: 3015 1st Avenue Portland OR, 97201 Tel. #: 503-924-4704 x125 E-mail: sbosze@ashcreekassociates.com	Invoice To: Delia Chadwick ODEQ Address: 811 SW Sixth Avenue Portland OR, 97204 Tel. #:		

Project Name: Project #: 1843-00				Sample Preservative												
Sampler Name: Mike Whitson				Requested Analyses												
Sample ID#	Collection Date/Time	Matrix	Number of Containers	8270	PUP											
PZ-105	04-10-12 0945	GW	2	X												
MW-155	4-10-12 1045	GW	2	X												
MW-165	4-10-12 1145	GW	2	X												
MW-165 DUP	4-10-12 1145	GW	2	X												
MW-165 MS	4-10-12 1145	GW	2	X												
MW-165 MSD	4-10-12 1145	GW	2	X												
PZ-102	4-10-12 1305	GW	2	X												
MW-135	4-10-12 1415	GW	2	X												
MW-125	4-10-12 1520	GW	2	X												
MW-065	4-10-12 1630	GW	2	X												
MW-065 DUP	4-10-12 1630	GW	2	X												
MW-06D	4-10-12 1725	GW	2	X												

Notes:

Relinquished By: Mike Whitson	Agency/Agent: Ash Creek	Received By:	Agency/Agent:
Signature:	Time & Date: 4-12-12 1500	Signature:	Time & Date:
Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Signature:	Time & Date:	Signature:	Time & Date:

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT #1. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

OREGONDEQ - State of Oregon Sample Chain of Custody - OREGONDEQ

Page 2 of 2

Agency, Authorized Purchaser or Agent: Ash Creek Associates for ODEQ				Contract Laboratory Name: Lab Batch #: Contract # 8903				Lab Selection Criteria: <input type="checkbox"/> Proximity (if TAT < 48 hrs) <input type="checkbox"/> Prior work on same project <input type="checkbox"/> Cost (for anticipated analyses) <input type="checkbox"/> Other labs disqualified or unable to perform requested services <input type="checkbox"/> Emergency work				Turn Around Time: <input checked="" type="checkbox"/> 10 days (std.) <input type="checkbox"/> 5 days <input type="checkbox"/> 72 hours <input type="checkbox"/> 48 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Other		
Send Lab Report To: Stephanie Bosze - Ash Creek Address: 3015 1st Avenue Portland OR, 97201 Tel. #: 503-924-4704 x125 E-mail: sbosze@ashcreekassociates.com				Invoice To: Delia Chadwick - ODEQ Address: 811 SW 6th Avenue Portland OR, 97204 Tel. #:										
Project Name: Project #: 1843-00 Sampler Name:				Sample Preservative										
				Requested Analyses										
Sample ID#	Collection Date/Time	Matrix	Number of Containers	8270	8271	8272	8273	8274	8275	8276	8277	8278	8279	Comments
MW-75	4-7-12 1845	GW	2	X										
MW-255	4-11-12 0915	GW	2	X										
MW-95	4-11-12 0955	GW	2	X										
MW-1035	4-11-12 1055	GW	2	X										
MW-205	4-11-12 1215	GW	2	X										
MW-195	4-11-12 1320	GW	2	X										
PZ-101	4-11-12 1445	GW	2	X										
MW-115	4-11-12 1600	GW	2	X										
RW-01	4-11-12 1640	GW	2	X										
MW-105	4-11-12 1730	GW	2	X										
MW-245	4-11-12 1825	GW	2	X										
Notes:														
Relinquished By: Mike Whitson				Agency/Agent: Ash Creek				Received By:				Agency/Agent:		
Signature:				Time & Date: 4-12-12 1500				Signature:				Time & Date:		
Relinquished By:				Agency/Agent:				Received By:				Agency/Agent:		
Signature:				Time & Date:				Signature:				Time & Date:		

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # 1. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S & C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

Oregon Dept. of Env. Quality - ODEQ 3150 NW 229th St., Suite 150 Hillsboro, OR 97124				Billing information: Delia Chadwick - ODEQ 811 SW Sixth Avenue Portland, OR 97204				Analysis/Container/Preservative <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">8270PCP 100ml Amb NoPres</div> <div> <table border="1" style="width:100%; height: 100px;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> </div> </div>												Chain of Custody Page <u>2</u> of <u>3</u> 12065 Lebanon Road Mt. Juliet, TN 37122 Phone: (800) 767-5859 Phone: (615) 758-5858 Fax: (615) 758-5859			
Report to: Stephanie Bosze				Email: SBosze@ashcreekassociates.c																			
Project Description: Taylor Lumber				City/State Collected: SHERIDAN, OREGON																			
Phone: (503) 693-5745 FAX: (503) 373-1626		Client Project #: 1843-00		Lab Project #: OREGONDEQ-TAYLORLU																			
Collected by (print): MICHAEL WHITSON		Site/Facility ID#:		P.O.#:																			
Collected by (signature):		Rush? (Lab MUST Be Notified) ___ Same Day 200% ___ Next Day 100% ___ Two Day 50% ___ Three Day 25%		Date Results Needed Email? ___ No ___ Yes FAX? ___ No ___ Yes																			
Immediately Packed on Ice N ___ Y <u>X</u>				No. of Cntrs																			
Sample ID		Comp/Grab	Matrix*	Depth	Date	Time																	
MW-06S			GW		04-10	1630	2	X															
MW-06S DUP			GW		04-10	1630	2	X															
MW-06D			GW		04-10	1725	2	X															
MW-1S			GW		04-10	1845	2	X															
MW-25S			GW		04-11	0915	2	X															
MW-9S			GW		04-11	0955	2	X															
MW-103S			GW		04-11	1055	2	X															
MW-20S			GW		04-11	1215	2	X															
MW-19S			GW		04-11	1330	2	X															

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

Remarks: Reporting PCP only. PCP needed at 1 ug/l.

pH _____ Temp _____

Flow _____ Other _____

Relinquished by: (Signature)	Date: <u>04-12</u> Time: <u>1500</u>	Received by: (Signature)	Samples returned via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> UPS <input type="checkbox"/> Courier	Condition: (lab use only) <u>MS</u>
Relinquished by: (Signature)	Date: _____ Time: _____	Received by: (Signature) _____	Temp: <u>3.0</u> Bottles Received: <u>76 + 148</u>	COC Seal Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA
Relinquished by: (Signature) _____	Date: _____ Time: _____	Received for lab by: (Signature)	Date: <u>4-13-12</u> Time: <u>0900</u>	pH Checked: _____ NCF: _____

Oregon Dept. of Env. Quality - ODEQ 3150 NW 229th St., Suite 150 Hillsboro, OR 97124				Billing information: Delia Chadwick - ODEQ 811 SW Sixth Avenue Portland, OR 97204				Analysis/Container/Preservative <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">8270PCP 100ml Amb NoPres</div> <div> <table border="1" style="width:100%; height: 100px;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table> </div> </div>														Chain of Custody Page <u>3</u> of <u>3</u> 12065 Lebanon Road Mt. Juliet, TN 37122 Phone: (800) 767-5859 Phone: (615) 758-5858 Fax: (615) 758-5859			
Report to: Stephanie Bosze				Email: SBosze@ashcreekassociates.c				8270PCP 100ml Amb NoPres																	
Project Description: Taylor Lumber				City/State Collected: SHERIDAN, OREGON																					
Phone: (503) 693-5745 FAX: (503) 373-1626		Client Project #: 1843-00		Lab Project #: OREGONDEQ-TAYLORLU																					
Collected by (print): MICHAEL WHITSON		Site/Facility ID#:		P.O.#:																					
Collected by (signature):		Rush? (Lab MUST Be Notified) Same Day 200% Next Day 100% Two Day 50% Three Day 25%		Date Results Needed Email? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes FAX? <input type="checkbox"/> No <input type="checkbox"/> Yes																					
Immediately Packed on Ice N <input type="checkbox"/> Y <input checked="" type="checkbox"/>				No. of Cntrs																					
Sample ID	Comp/Grab	Matrix*	Depth	Date	Time																				
PZ-101		GW			1445	2	X																		
MW-11S		GW			1600	2	X																		
RW-01		GW			1640	2	X																		
DUPLICATE		GW				2	X																		
DUPLICATE		GW				2	X																		
MS/MSD		GW				2	X																		
MW-10S		GW			1730	2	X																		
MW-24S		GW			1825	2	X																		

Acctnum: **OREGONDEQ** (lab use only)
 Template/Prelogin: **T70883/P387763**
 Cooler #: **2/29/12 AR**
 Shipped Via: **FedEX Ground**

Remarks/Contaminant Sample # (lab only)

LS61817-17

18

19

MW 04-12-12

MW 04-12-12

MW 04-12-12

20

21

*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

pH _____ Temp _____

Remarks: Reporting PCP only. PCP needed at 1 ug/l.

Flow _____ Other _____

Relinquished by: (Signature)	Date: 04-12	Time: 1500	Received by: (Signature) _____	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only)
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received by: (Signature) _____	Temp: 7.0	Bottles Received: 1/6 + 170
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received for lab by: (Signature)	Date: 4-13-12	Time: 0900
				COC Seal Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA	
				pH Checked: _____	NCF: _____



OREGON

Environmental Laboratory Accreditation Program



NELAP Recognized

Environmental Science Corporation

TN200002

12065 Lebanon Road

Mt. Juliet TN 37122

IS GRANTED APPROVAL BY ORELAP UNDER THE 2009 TNI STANDARDS, TO PERFORM
ANALYSES ON ENVIRONMENTAL SAMPLES IN MATRICES AS LISTED BELOW :

<i>Air</i>	<i>Drinking Water</i>	<i>Non Potable Water</i>	<i>Solids and Chem. Waste</i>	<i>Tissue</i>
Chemistry	Chemistry	Chemistry Toxicity Testing	Chemistry	

AND AS RECORDED IN THE LIST OF APPROVED ANALYTES, METHODS, ANALYTICAL
TECHNIQUES, AND FIELDS OF TESTING ISSUED CONCURRENTLY WITH THIS CERTIFICATE AND
REVISED AS NECESSARY.

ACCREDITED STATUS DEPENDS ON SUCCESSFUL ONGOING PARTICIPATION IN THE
PROGRAM AND CONTINUED COMPLIANCE WITH THE STANDARDS.

CUSTOMERS ARE URGED TO VERIFY THE LABORATORY'S CURRENT ACCREDITATION STATUS
IN OREGON.

Gary K. Ward, MS

Oregon State Public Health Laboratory

ORELAP Administrator

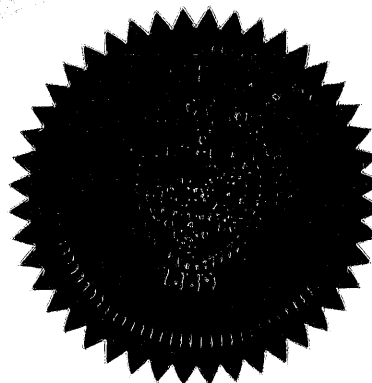
3150 NW. 229th Ave, Suite 100

Hillsboro, OR 97124

ISSUE DATE: 01/16/2012

EXPIRATION DATE: 01/15/2013

Certificate No: TN200002 - 008





Oregon

Environmental Laboratory Accreditation Program



Department of Agriculture, Laboratory Division
Department of Environmental Quality, Laboratory Division
Oregon Health Authority, Public Health Division

NELAP Recognized

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road
Mt. Juliet TN 37122

Issue Date: 01/16/2012 **Expiration Date:** 01/15/2013

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MATRIX : Air

Reference	Code	Description
EPA 3C	10247708	Fixed Gasses by GC/TCD
<hr/>		
Analyte Code	Analyte	
3780	Carbon monoxide	
4926	Methane	
1843	Nitrogen	
3895	Oxygen	
<hr/>		
EPA TO-15	10248803	VOCs collected in Canisters by GC/MS
<hr/>		
Analyte Code	Analyte	
5160	1,1,1-Trichloroethane	
5110	1,1,2,2-Tetrachloroethane	
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	
5165	1,1,2-Trichloroethane	
4630	1,1-Dichloroethane	
4640	1,1-Dichloroethylene	
5155	1,2,4-Trichlorobenzene	
5210	1,2,4-Trimethylbenzene	
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)	
4695	1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon-114)	
4610	1,2-Dichlorobenzene	
4635	1,2-Dichloroethane (Ethylene dichloride)	
4655	1,2-Dichloropropane	
5215	1,3,5-Trimethylbenzene	
9318	1,3-Butadiene	
4615	1,3-Dichlorobenzene	
4620	1,4-Dichlorobenzene	
4735	1,4-Dioxane (1,4- Diethyleneoxide)	
4836	1-Propene	
5220	2,2,4-Trimethylpentane	
4410	2-Butanone (Methyl ethyl ketone, MEK)	
4535	2-Chlorotoluene	
4860	2-Hexanone	
4542	4-Ethyltoluene	
4995	4-Methyl-2-pentanone (MIBK)	
4300	Acetaldehyde	
4315	Acetone	
4320	Acetonitrile	
4355	Allyl chloride (3-Chloropropene)	
4375	Benzene	
5635	Benzyl chloride	

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Analyte Code	Analyte
4395	Bromodichloromethane
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4555	Cyclohexane
4625	Dichlorodifluoromethane (Freon 12)
4750	Ethanol
4765	Ethylbenzene
9408	Gasoline range organics (GRO)
4835	Hexachlorocyclopentadiene
4870	Iodomethane (Methyl iodide)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4900	Isopropylbenzene
4930	Methanol
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4975	Methylene chloride (Dichloromethane)
5245	m-Xylene
5005	Naphthalene
4825	n-Heptane
4855	n-Hexane
5250	o-Xylene
5255	p-Xylene
5100	Styrene
4420	tert-Butyl alcohol
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5225	Vinyl acetate
5230	Vinyl bromide (Bromoethane)
5235	Vinyl chloride
5260	Xylene (total)



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MATRIX : Drinking Water

Reference	Code	Description
EPA 150.1	10008409	pH - Electrometric Measurement
Analyte Code	Analyte	
1900	pH	
EPA 180.1 2	10011800	Turbidity - Nephelometric
Analyte Code	Analyte	
2055	Turbidity	
EPA 200.7 5	10014003	ICP - metals
Analyte Code	Analyte	
1000	Aluminum	
1010	Arsenic	
1015	Barium	
1020	Beryllium	
1030	Cadmium	
1035	Calcium	
1040	Chromium	
1055	Copper	
1760	Hardness (calc.)	
1070	Iron	
1085	Magnesium	
1090	Manganese	
1105	Nickel	
1150	Silver	
1155	Sodium	
1190	Zinc	
EPA 200.8 5.5	10014809	Metals by ICP-MS
Analyte Code	Analyte	
1005	Antimony	
1010	Arsenic	
1015	Barium	
1020	Beryllium	
1030	Cadmium	
1040	Chromium	
1055	Copper	
1075	Lead	
1090	Manganese	
1105	Nickel	
1140	Selenium	
1150	Silver	
1165	Thallium	
1190	Zinc	
EPA 245.1 3	10036609	Mercury by Cold Vapor Atomic Absorption
Analyte Code	Analyte	
1095	Mercury	
EPA 300.0	10053006	Ion chromatography - anions.
Analyte Code	Analyte	
1540	Bromide	
1570	Chlorate	

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Analyte Code	Analyte
1575	Chloride
1595	Chlorite
1730	Fluoride
1810	Nitrate as N
1840	Nitrite as N
1870	Orthophosphate as P
2000	Sulfate

EPA 314.0	10055400	Perchlorate in Drinking Water by Ion Chromatography
Analyte Code	Analyte	
1895	Perchlorate	

EPA 335.4	10061402	Methods for the Determination of Inorganic Substances in Environmental Samples
Analyte Code	Analyte	
1645	Total cyanide	

EPA 350.1 2	10063602	Ammonia Nitrogen - Colorimetric, Auto Phenate
Analyte Code	Analyte	
1515	Ammonia as N	

EPA 353.2 2	10067604	Nitrate/Nitrite Nitrogen - Automated, Cadmium
Analyte Code	Analyte	
1810	Nitrate as N	
1840	Nitrite as N	

EPA 504.1	10083008	EDB/DBCP/TCP micro-extraction, GC/ECD
Analyte Code	Analyte	
5180	1,2,3-Trichloropropane	
4570	1,2-Dibromo-3-chloropropane (DBCP)	
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)	

EPA 507 2	10084807	Nitrogen & Phosphorous Pesticides (Drinking Water) by GC/NPD
Analyte Code	Analyte	
7005	Alachlor	
7065	Atrazine	
7160	Butachlor	
7835	Metolachlor	
7845	Metribuzin	
8125	Simazine	

EPA 508 3	10085402	Chlorinated Pesticides in Water by GC/ECD
Analyte Code	Analyte	
7355	4,4'-DDD	
7360	4,4'-DDE	
7365	4,4'-DDT	
7025	Aldrin	
7110	alpha-BHC (alpha-Hexachlorocyclohexane)	
7115	beta-BHC (beta-Hexachlorocyclohexane)	
7250	Chlordane (tech.)	
7105	delta-BHC	
7470	Dieldrin	
7510	Endosulfan I	
7515	Endosulfan II	

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Analyte Code	Analyte
7520	Endosulfan sulfate
7540	Endrin
7530	Endrin aldehyde
7535	Endrin ketone
7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)
7685	Heptachlor
7690	Heptachlor epoxide
6275	Hexachlorobenzene
6285	Hexachlorocyclopentadiene
7810	Methoxychlor
8045	Propachlor (Ramrod)
8250	Toxaphene (Chlorinated camphene)
8295	Trifluralin (Treflan)

EPA 515.1 4

10087408

Chlorinated acids Liquid/Liquid and GC/ECD

Analyte Code	Analyte
8655	2,4,5-T
8545	2,4-D
8560	2,4-DB
8555	Dalapon
8595	Dicamba
8605	Dichloroprop (Dichloroprop)
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
8650	Silvex (2,4,5-TP)

EPA 524.2 4

10089006

Volatile Organic Compounds by purge and trap GC/MS

Analyte Code	Analyte
5105	1,1,1,2-Tetrachloroethane

EPA 524.2 4.1

10088809

Volatile Organic Compounds GC/MS Capillary Column

Analyte Code	Analyte
5105	1,1,1,2-Tetrachloroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
6800	1,3,5-Trichlorobenzene
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4535	2-Chlorotoluene
4860	2-Hexanone
4540	4-Chlorotoluene

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Analyte Code	Analyte
4910	4-Isopropyltoluene (p-Cymene)
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4375	Benzene
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
4765	Ethylbenzene
4835	Hexachlorobutadiene
4840	Hexachloroethane
4870	Iodomethane (Methyl iodide)
4900	Isopropylbenzene
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
5000	Methyl tert-butyl ether (MTBE)
4975	Methylene chloride (Dichloromethane)
5005	Naphthalene
4435	n-Butylbenzene
5090	n-Propylbenzene
4440	sec-Butylbenzene
5100	Styrene
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethane (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5235	Vinyl chloride
5260	Xylene (total)

EPA 552.2 1

10095804

Haloacetic Acid/Dalapon, Liquid/Liquid Extraction, Derivatization and GC/ECD

Analyte Code	Analyte
9312	Bromoacetic acid
9315	Bromochloroacetic acid
9336	Chloroacetic acid
9357	Dibromoacetic acid
9360	Dichloroacetic acid
9642	Trichloroacetic acid

SM 2120 B 20th ED

20224004

Color by Visual Comparison

Analyte Code	Analyte
1605	Color

ORELAP Fields of Accreditation

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SM 2130 B 20th ED 20042404 Turbidity by Nephelometric Determination

Analyte Code	Analyte
2055	Turbidity

SM 2150 B 20th ED 20043407 Odor by Threshold Odor Test

Analyte Code	Analyte
1855	Odor

SM 2320 B 20th ED 20045209 Alkalinity by Titration

Analyte Code	Analyte
1505	Alkalinity as CaCO ₃

SM 2340 B 20th ED 20046202 Hardness by calculation

Analyte Code	Analyte
1750	Hardness

SM 2510 B 20th ED 20048208 Conductivity by Probe

Analyte Code	Analyte
1610	Conductivity

SM 2540 C 20th ED 20050004 Total Dissolved Solids

Analyte Code	Analyte
1955	Residue-filterable (TDS)

SM 4110 B 20th ED 20076602 Anions by Ion Chromatography with Chemical Suppression of Eluent

Analyte Code	Analyte
1575	Chloride
1730	Fluoride
1810	Nitrate as N
1840	Nitrite as N
1870	Orthophosphate as P
2000	Sulfate

SM 4500-CI G 20th ED 20081203 Residual Chlorine by DPD Colorimetric Determination

Analyte Code	Analyte
1940	Total residual chlorine

SM 4500-CN C 20th ED 20091605 Cyanide, Total After Distillation

Analyte Code	Analyte
1635	Cyanide

SM 4500-CN E 20th ED 20092404 Cyanide by Colorimetric Determination

Analyte Code	Analyte
1635	Cyanide
1645	Total cyanide

SM 4500-CN G 20th ED 20093203 Cyanide Amenable to Chlorination after Distillation

Analyte Code	Analyte
1510	Amenable cyanide

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SM 4500-H+ B 20th ED	20104807	pH by Probe
Analyte Code	Analyte	
1900	pH	
SM 4500-NH3 G 20th ED	20111006	Ammonia by Automated Phenate
Analyte Code	Analyte	
1515	Ammonia as N	
SM 4500-NO3 ⁻ E 20th ED	20114403	Nitrate Nitrogen by Cadmium Reduction Method
Analyte Code	Analyte	
1805	Nitrate	
SM 4500-NO3 ⁻ F 20th ED	20116205	Nitrate Nitrogen by Automated Cadmium Reduction Method
Analyte Code	Analyte	
1810	Nitrate as N	
1840	Nitrite as N	
SM 4500-P E 20th ED	20123802	Phosphorus by Ascorbic Acid Reduction
Analyte Code	Analyte	
1870	Orthophosphate as P	
SM 5310 C 20th ED	20138403	Total Organic Carbon by Persulfate-Ultraviolet Oxidation Method
Analyte Code	Analyte	
2040	Total organic carbon	
SM 5320 B 20th ED	20140403	Absorbable Organic Halogen
Analyte Code	Analyte	
2045	Total organic halides (TOX)	
SM 5540 C 20th ED	20144609	Surfactants as MBAS
Analyte Code	Analyte	
2025	Surfactants - MBAS	
SM 5910 B 19th ED	20145806	UV absorbing organic constituents
Analyte Code	Analyte	
2060	UV 254	

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road
Mt. Juliet TN 37122

Issue Date: 01/16/2012 Expiration Date: 01/15/2013

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MATRIX : Non-Potable Water

Reference	Code	Description
ASTM D1067-92	30003806	Acidity or Alkalinity of Water
Analyte Code	Analyte	
1500	Acidity, as CaCO ₃	
EPA 1000	10114600	Fathead Minnow Larval Survival and Growth, chronic (EPA 821/R-02/013)
Analyte Code	Analyte	
3450	Tox, chronic, fw organism	
EPA 1002	10115001	Daphnid Survival and Reproduction, chronic (EPA 821/R-02/013)
Analyte Code	Analyte	
3450	Tox, chronic, fw organism	
EPA 1010	10116606	Pensky-Martens Closed-Cup Method for Determining Ignitability
Analyte Code	Analyte	
1780	Ignitability	
EPA 1010A	10234807	Pensky-Martens Closed-Cup Method for Determining Ignitability
Analyte Code	Analyte	
1780	Ignitability	
EPA 1110	10118000	Corrosivity Toward Steel
Analyte Code	Analyte	
1615	Corrosivity	
EPA 1110A	10235208	Corrosivity Toward Steel
Analyte Code	Analyte	
1615	Corrosivity	
EPA 120.1	10006403	Conductance - Specific @ 25 C
Analyte Code	Analyte	
1610	Conductivity	
EPA 130.1	10006801	Hardness - Colorimetric, Automated EDTA
Analyte Code	Analyte	
1750	Hardness	
EPA 1311	10118806	Toxicity Characteristic Leaching Procedure
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 1312	10119003	Synthetic Precipitation Leaching Procedure
Analyte Code	Analyte	
8031	Extraction/Preparation	

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road
Mt. Juliet TN 37122

Issue Date: 01/16/2012 Expiration Date: 01/15/2013

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EPA 160.4 10256801 Total Volatile Solids, ignition @ 550 C.

Analyte Code	Analyte
4075	Vol. residue, density, water & solids content of coatings

EPA 1657 10126008 Organophosphorus Pesticides by Liquid/Liquid Extraction and GC/FPD

Analyte Code	Analyte
7075	Azinphos-methyl (Guthion)
7125	Bolstar (Sulprofos)
7300	Chlorpyrifos
7315	Coumaphos
7395	Demeton-o
7385	Demeton-s
7410	Diazinon
8610	Dichlorvos (DDVP, Dichlorvos)
7475	Dimethoate
8625	Disulfoton
7550	EPN
7570	Ethoprop
7600	Fensulfothion
7605	Fenthion
7770	Malathion
7785	Merphos
7825	Methyl parathion (Parathion, methyl)
7850	Mevinphos
7905	Naled
7985	Phorate
8110	Ronnel
8155	Sulfotepp
8200	Tetraethyolphos (Stirophos, Gardona Z-isomer)
8210	Tetraethyl pyrophosphate (TEPP)
8245	Tokuthion (Prothiophos)
8275	Trichloronate

EPA 1664A (HEM) 10127807 N-Hexane Extractable Material (Oil and Grease) by Extraction and Gravimetry

Analyte Code	Analyte
1803	n-Hexane Extractable Material (O&G)

EPA 1664A (SGT-HEM) 10261606 Silica Gen Treated N-Hexane Extractable Material (Oil and Grease)

Analyte Code	Analyte
1803	n-Hexane Extractable Material (O&G)

EPA 180.1 2 10011800 Turbidity - Nephelometric

Analyte Code	Analyte
2055	Turbidity

EPA 200.7 5 10014003 ICP - metals

Analyte Code	Analyte
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium

ORELAP Fields of Accreditation

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EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

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Analyte Code	Analyte
1040	Chromium
1050	Cobalt
1055	Copper
1760	Hardness (calc.)
1070	Iron
1075	Lead
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 200.8 5.5

10014809

Metals by ICP-MS

Analyte Code	Analyte
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1030	Cadmium
1040	Chromium
1055	Copper
1075	Lead
1090	Manganese
1100	Molybdenum
1105	Nickel
1140	Selenium
1150	Silver
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 2000 Fathead minnow Acute MHSF 20°C 10264809

Fathead Minnow, acute

Analyte Code	Analyte
3455	Toxicity, acute, fw organism

EPA 2002 Ceriodaphnia dubia Acute 20% DMW 20°C

10214605

Cerodaphnia dubia, acute

Analyte Code	Analyte
3440	Tox, acute, estu & marine organism

EPA 218.6

10268403

Dissolved Hexavalent Chromium by Ion Chromatography

Analyte Code	Analyte
1045	Chromium VI

EPA 245.1 3

10036609

Mercury by Cold Vapor Atomic Absorption

Analyte Code	Analyte
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ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

As of 01/16/2012 this list supercedes all previous lists for this certificate number.

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Analyte Code	Analyte
1095	Mercury
EPA 300.0 2.1	10053200 Methods for the Determination of Inorganic Substances in Environmental Samples
Analyte Code	Analyte
1540	Bromide
1575	Chloride
1730	Fluoride
1810	Nitrate as N
1820	Nitrate-nitrite
1840	Nitrite as N
1870	Orthophosphate as P
2000	Sulfate
EPA 3005A	10133207 Acid Digestion of waters for Total Recoverable or Dissolved Metals
Analyte Code	Analyte
8031	Extraction/Preparation
EPA 3010A	10133605 Acid Digestion of Aqueous samples and Extracts for Total Metals
Analyte Code	Analyte
8031	Extraction/Preparation
EPA 3015	10133809 Microwave Assisted Acid Digestion of Aqueous Samples and Extracts
Analyte Code	Analyte
8031	Extraction/Preparation
EPA 3015A	10134006 Microwave Assisted Acid Digestion of Sediments, Sludges, Soils, and Oils
Analyte Code	Analyte
8031	Extraction/Preparation
EPA 3020A	10134404 Acid Digestion of Aqueous samples and Extracts for Total Metals for Analysis by GFAA
Analyte Code	Analyte
8031	Extraction/Preparation
EPA 310.2	10055206 Alkalinity as CaCO ₃ - Colorimetric, Automated
Analyte Code	Analyte
1505	Alkalinity as CaCO ₃
EPA 335.4	10061402 Methods for the Determination of Inorganic Substances in Environmental Samples
Analyte Code	Analyte
1635	Cyanide
EPA 350.1 2	10063602 Ammonia Nitrogen - Colorimetric, Auto Phenate
Analyte Code	Analyte
1515	Ammonia as N
EPA 351.2 2	10065404 Total Kjeldahl Nitrogen - Block Digest, Phenate
Analyte Code	Analyte
1795	Kjeldahl nitrogen - total

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

As of 01/16/2012 this list supercedes all previous lists for this certificate number.

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EPA 3510C	10138202	Separatory Funnel Liquid-liquid extraction
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 3520C	10139001	Continuous Liquid-liquid extraction
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 353.2 2	10067604	Nitrate/Nitrite Nitrogen - Automated, Cadmium
Analyte Code	Analyte	
1820	Nitrate-nitrite	
6484	Nitrocellulose	
EPA 376.1	10074201	Sulfide - Titrimetric, Iodine.
Analyte Code	Analyte	
2005	Sulfide	
EPA 410.4 2	10077404	Chemical Oxygen Demand - Colorimetric, Automated.
Analyte Code	Analyte	
1565	Chemical oxygen demand	
EPA 420.1	10079400	Phenolics - Spectrophotometric, manual.
Analyte Code	Analyte	
1905	Total phenolics	
EPA 420.4	10080203	Phenolics, Total Recoverable by Semi-Automated Colorimetry
Analyte Code	Analyte	
1905	Total phenolics	
EPA 5030B	10153409	Purge and trap for aqueous samples
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 5030C	10284603	Purge-and-Trap for Aqueous Samples
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 6010B	10155609	ICP - AES
Analyte Code	Analyte	
1000	Aluminum	
1005	Antimony	
1010	Arsenic	
1015	Barium	
1020	Beryllium	
1025	Boron	
1030	Cadmium	
1035	Calcium	
1040	Chromium	
1050	Cobalt	
1055	Copper	
1070	Iron	

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

As of 01/16/2012 this list supercedes all previous lists for this certificate number.
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Analyte Code	Analyte
1075	Lead
1080	Lithium
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 6010C

10155803

ICP - AES

Analyte Code	Analyte
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead
1080	Lithium
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 602

10102202

Purgeable Aromatics by GC/PID Purge & Trap

Analyte Code	Analyte
4375	Benzene
4765	Ethylbenzene
5000	Methyl tert-butyl ether (MTBE)
4420	tert-Butyl alcohol
5140	Toluene
5260	Xylene (total)

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

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Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012 Expiration Date: 01/15/2013

As of 01/16/2012 this list supercedes all previous lists for this certificate number.
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EPA 6020 10156000 Inductively Coupled Plasma-Mass Spectrometry

Analyte Code	Analyte
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1030	Cadmium
1040	Chromium
1055	Copper
1075	Lead
1090	Manganese
1100	Molybdenum
1105	Nickel
1140	Selenium
1150	Silver
1165	Thallium
1175	Tin
1185	Vanadium
1190	Zinc

EPA 6020A 10156408 Inductively Coupled Plasma-Mass Spectrometry

Analyte Code	Analyte
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1030	Cadmium
1040	Chromium
1055	Copper
1075	Lead
1090	Manganese
1100	Molybdenum
1105	Nickel
1140	Selenium
1150	Silver
1165	Thallium
1175	Tin
1185	Vanadium
1190	Zinc

EPA 608 10103603 Organochlorine Pesticides & PCBs by GC/ECD

Analyte Code	Analyte
7355	4,4'-DDD
7360	4,4'-DDE
7365	4,4'-DDT
7025	Aldrin
7110	alpha-BHC (alpha-Hexachlorocyclohexane)
7240	alpha-Chlordane
8880	Aroclor-1016 (PCB-1016)
8885	Aroclor-1221 (PCB-1221)
8890	Aroclor-1232 (PCB-1232)
8895	Aroclor-1242 (PCB-1242)
8900	Aroclor-1248 (PCB-1248)
8905	Aroclor-1254 (PCB-1254)
8910	Aroclor-1260 (PCB-1260)
7115	beta-BHC (beta-Hexachlorocyclohexane)
7250	Chlordane (tech.)
7265	Chloroneb

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

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Environmental Science Corporation

12065 Lebanon Road
Mt. Juliet TN 37122

Issue Date: 01/16/2012 Expiration Date: 01/15/2013

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Analyte Code	Analyte
7310	Chlorthalonil (Daconil)
7105	delta-BHC
7470	Dieldrin
7510	Endosulfan I
7515	Endosulfan II
7520	Endosulfan sulfate
7540	Endrin
7530	Endrin aldehyde
7535	Endrin ketone
7120	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)
7245	gamma-Chlordane
7685	Heptachlor
7690	Heptachlor epoxide
6275	Hexachlorobenzene
7810	Methoxychlor
8250	Toxaphene (Chlorinated camphene)

EPA 610	10104402	Polynuclear Hydrocarbons by HPLC/UV-VIS
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Analyte Code	Analyte
5500	Acenaphthene
5505	Acenaphthylene
5555	Anthracene
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[j]fluoranthene
5855	Chrysene
5895	Dibenz(a,h)anthracene
6265	Fluoranthene
6270	Fluorene
6315	Indeno(1,2,3-cd)pyrene
5005	Naphthalene
6615	Phenanthrene
6665	Pyrene

EPA 615	10105609	Chlorinated Herbicides by Liquid/Liquid Extraction, Derivatization and GC/ECD
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Analyte Code	Analyte
8560	2,4-DB
8595	Dicamba
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
7775	MCPA
7780	MCPP

EPA 622	10106806	Organophosphorus Pesticides by Liquid/Liquid Extraction and GC/NPD
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Analyte Code	Analyte
7125	Bolstar (Sulprofos)
7300	Chlorpyrifos
7315	Coumaphos
7395	Demeton-o
7385	Demeton-s
8610	Dichlorovos (DDVP, Dichlorvos)
7475	Dimethoate
7570	Ethoprop
7600	Fensulfthion
7605	Fenthion
7785	Merphos

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

As of 01/16/2012 this list supercedes all previous lists for this certificate number.
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Analyte Code	Analyte
7825	Methyl parathion (Parathion, methyl)
7850	Mevinphos
7985	Phorate
8155	Sulfotepp
8200	Tetrachlorvinphos (Stirophos, Gardona) Z-isomer
8210	Tetraethyl pyrophosphate (TEPP)
8245	Tokuthion (Prothiophos)

EPA 624

10107207

Volatile Organic Compounds by purge and trap GC/MS

Analyte Code	Analyte
5105	1,1,1,2-Tetrachloroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5182	1,2,3-Trimethylbenzene
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4-Dioxolane)
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4500	2-Chloroethyl vinyl ether
4535	2-Chlorotoluene
4860	2-Hexanone
5020	2-Nitropropane
4540	4-Chlorotoluene
4910	4-Isopropyltoluene (p-Cymene)
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4320	Acetonitrile
4325	Acrolein (Propenal)
4340	Acrylonitrile
4355	Allyl chloride (3-Chloropropene)
4375	Benzene
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4397	Bromoethane (Ethyl Bromide)
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4525	Chloroprene (2-Chloro-1,3-butadiene)

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

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Analyte Code	Analyte
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4600	cis-1,4-Dichloro-2-butene
4555	Cyclohexane
4560	Cyclohexanone
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
4725	Diethyl ether
9375	Di-isopropylether (DIPE)
4750	Ethanol
4755	Ethyl acetate
4810	Ethyl methacrylate
4765	Ethylbenzene
4770	Ethyl tert-butylether (ETBE) (2-Ethoxy-2-methylpropane)
4835	Hexachlorocyclopentadiene
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4900	Isopropylbenzene
4925	Methacrylonitrile
4940	Methyl acetate
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butylether (MTBE)
4965	Methylcyclohexane
4975	Methylene chloride (Dichloromethane)
5245	m-Xylene
4365	n-Amyl alcohol
5005	Naphthalene
4425	n-Butyl alcohol (1-Butanol, n-Butanol)
4415	n-Butyl acetate
4435	n-Butylbenzene
4855	n-Hexane
5027	n-Octane
5090	n-Propylbenzene
5250	o-Xylene
5035	Pentachloroethane
5080	Propionitrile (Ethyl cyanide)
5255	p-Xylene
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethylether (TAME)
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)

EPA 625

10300002

Base/Neutrals and Acids by GC/MS

Analyte Code	Analyte
6715	1,2,4,5-Tetrachlorobenzene

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet

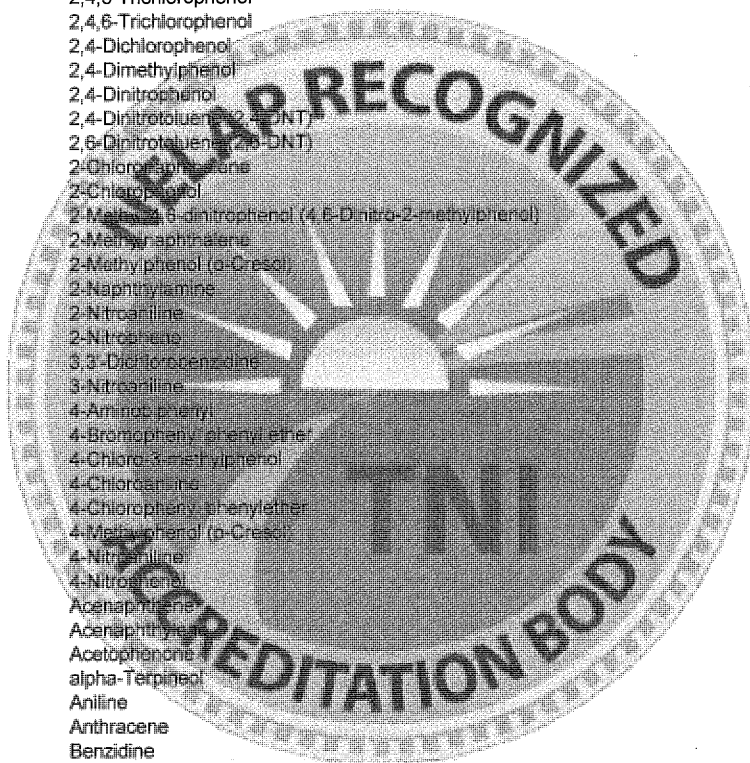
TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

As of 01/16/2012 this list supercedes all previous lists for this certificate number.
Customers. Please verify the current accreditation standing with ORELAP.

Analyte Code	Analyte
5155	1,2,4-Trichlorobenzene
6221	1,2-Diphenylhydrazine
6420	1,4-Naphthoquinone
5790	1-Chloronaphthalene
6425	1-Naphthylamine
6735	2,3,4,6-Tetrachlorophenol
9363	2,3-Dichloroaniline
6835	2,4,5-Trichlorophenol
6840	2,4,6-Trichlorophenol
6000	2,4-Dichlorophenol
6130	2,4-Dimethylphenol
6175	2,4-Dinitrophenol
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
5795	2-Chloronaphthalene
5800	2-Chlorophenol
6360	2-Methyl-6-nitrophenol (4,6-Dinitro-2-methylphenol)
6385	2-Methylnaphthalene
6400	2-Methylphenol (o-Cresol)
6430	2-Naphthylamine
6460	2-Nitroaniline
6490	2-Nitrophenol
5945	3,3'-Dichlorobenzidine
6465	3-Nitroaniline
5540	4-Aminobiphenyl
5660	4-Bromophenyl phenyl ether
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
6410	4-Methylphenol (p-Cresol)
6470	4-Nitroaniline
6500	4-Nitrophenol
5500	Acenaphthene
5505	Acenaphthylene
5510	Acetophenone
6700	alpha-Terpineol
5545	Aniline
5555	Anthracene
5595	Benaidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5610	Benzoic acid
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
5670	Butyl benzyl phthalate
5680	Carbazole
5855	Chrysene
6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
5895	Dibenz(a,h) anthracene
5905	Dibenzofuran
6070	Diethyl phthalate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
7580	Famphur
6265	Fluoranthene
6270	Fluorene



ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

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Analyte Code	Analyte
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6290	Hexachlorophene
6295	Hexachloropropene
6315	Indeno(1,2,3-cd) pyrene
6320	Isophorone
7740	Kepone
5005	Naphthalene
5875	n-Decane
5015	Nitrobenzene
6525	n-Nitrosodiethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitrosodipropylamine
6545	n-Nitrosodiphenylamine
6535	n-Nitrosopyrrolidine
6565	n-Octadecane
6580	Pentachlorobenzene
6590	Pentachloroethane
5035	Pentachlorophenol
6605	Phenanthrene
6615	Phenol
6625	Pyrene
6665	Pyridine
5095	

EPA 7196A	10162400	Chromium Hexavalent colorimetric
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Analyte Code	Analyte
1045	Chromium VI

EPA 7199	10163005	Determination of Hexavalent Chromium in Drinking Water, Groundwater and Industrial Wastewater Effluents by Ion Chromatography
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Analyte Code	Analyte
1045	Chromium VI

EPA 7470A	10165807	Mercury in Liquid Waste by Cold Vapor Atomic Absorption
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Analyte Code	Analyte
1095	Mercury

EPA 8011	10173009	1,2-Dibromoethane and 1,2-Dibromo-3-chloropropane by Microextraction and GC/ECD
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Analyte Code	Analyte
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4580	Dibromochloropropane

EPA 8015B	10173601	Non-halogenated organics using GC/FID
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Analyte Code	Analyte
9369	Diesel range organics (DRO)
4750	Ethanol
9408	Gasoline range organics (GRO)
4930	Methanol

EPA 8015D	10305609	Nonhalogenated Organics Using GC/FID
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Analyte Code	Analyte
9369	Diesel range organics (DRO)

ORELAP Fields of Accreditation

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Analyte Code	Analyte
4750	Ethanol
9408	Gasoline range organics (GRO)
4930	Methanol

EPA 8021B 10174808 Aromatic and Halogenated Volatiles by GC with PID and/or ECD Purge & Trap

Analyte Code	Analyte
4375	Benzene
4765	Ethylbenzene
5000	Methyl tert-butyl ether (MTBE)
5245	m-Xylene
5250	o-Xylene
5255	p-Xylene
5140	Toluene
5260	Xylene (total)

EPA 8081A 10178606 Organochlorine Pesticides by GC/ECD

Analyte Code	Analyte
7355	4,4'-DDD
7360	4,4'-DDE
7365	4,4'-DDT
7005	Alachlor
7025	Aldrin
7110	alpha-BHC (alpha-Hexachlorocyclohexane)
7240	alpha-Chlordane
7115	beta-BHC (beta-Hexachlorocyclohexane)
7250	Chlordane (tech.)
7265	Chlorobenz
7310	Chlorobenzil (Daconil)
7105	delta-BHC
7470	Dieldrin
7510	Endosulfan I
7515	Endosulfan II
7520	Endosulfan sulfate
7540	Endrin
7530	Endrin aldehyde
7535	Endrin ketone
7575	Etridiazole
7120	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)
7245	gamma-Chlordane
7685	Heptachlor
7690	Heptachlor epoxide
6275	Hexachlorobenzene
6285	Hexachlorocyclopentadiene
7810	Methoxychlor
7975	Permethrin (total)
8045	Propachlor (Ramrod)
8250	Toxaphene (Chlorinated camphene)
8295	Trifluralin (Treflan)

EPA 8081B 10178800 Organochlorine Pesticides by GC/ECD

Analyte Code	Analyte
7355	4,4'-DDD
7360	4,4'-DDE
7365	4,4'-DDT
7005	Alachlor
7025	Aldrin
7110	alpha-BHC (alpha-Hexachlorocyclohexane)

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

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Analyte Code	Analyte
7240	alpha-Chlordane
7115	beta-BHC (beta-Hexachlorocyclohexane)
7250	Chlordane (tech.)
7265	Chloroneb
7310	Chlorthalonil (Daconil)
7105	delta-BHC
7470	Dieldrin
7510	Endosulfan I
7515	Endosulfan II
7520	Endosulfan sulfate
7540	Endrin
7530	Endrin aldehyde
7535	Endrin ketone
7575	Etridiazole
7120	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)
7245	gamma-Chlordane
7685	Heptachlor
7690	Heptachlor epoxide
6275	Hexachlorobenzene
6285	Hexachlorocyclopentadiene
7810	Methoxychlor
7975	Permethrin (total)
8045	Propachlor (Ramrod)
8250	Toxaphene (Chlorinated camphene)
8295	Trifluralin (Treflan)

EPA 8082	10179007	Polychlorinated Biphenyls (PCBs) by GC/ECD
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Analyte Code	Analyte
8880	Aroclor-1016 (PCB-1016)
8885	Aroclor-1221 (PCB-1221)
8890	Aroclor-1232 (PCB-1232)
8895	Aroclor-1242 (PCB-1242)
8900	Aroclor-1248 (PCB-1248)
8905	Aroclor-1254 (PCB-1254)
8910	Aroclor-1260 (PCB-1260)

EPA 8082A	10179201	Polychlorinated Biphenyls (PCBs) by GC/ECD
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Analyte Code	Analyte
8880	Aroclor-1016 (PCB-1016)
8885	Aroclor-1221 (PCB-1221)
8890	Aroclor-1232 (PCB-1232)
8895	Aroclor-1242 (PCB-1242)
8900	Aroclor-1248 (PCB-1248)
8905	Aroclor-1254 (PCB-1254)
8910	Aroclor-1260 (PCB-1260)

EPA 8141A	10182000	Organophosphorous Pesticides by GC/NPD
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Analyte Code	Analyte
7075	Azinphos-methyl (Guthion)
7125	Bolstar (Sulprofos)
7300	Chlorpyrifos
7315	Coumaphos
7395	Demeton-o
7385	Demeton-s
7410	Diazinon
8610	Dichlorovos (DDVP, Dichlorvos)
7475	Dimethoate

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

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Expiration Date: 01/15/2013

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Analyte Code	Analyte
8625	Disulfoton
7550	EPN
7570	Ethoprop
7600	Fensulfothion
7605	Fenthion
7770	Malathion
7785	Merphos
7825	Methyl parathion (Parathion, methyl)
7850	Mevinphos
7905	Naled
7955	Parathion, ethyl
7985	Phorate
8110	Ronnel
8155	Sulfotepp
8200	Tetrachlorvinphos (Stirophos, Gardona) Z-isomer
8210	Tetraethyl pyrophosphate (TEPP)
8245	Tokuthion (Prothiophos)
8275	Trichloronate

EPA 8141B

10182204

Organophosphorous Pesticides by GC/NPD

Analyte Code	Analyte
7075	Azinphos-methyl (Guthion)
7125	Bolstar (Sulprofos)
7300	Chlorpyrifos
7315	Gomaphos
7395	Demeton-o
7385	Demeton-s
7410	Diazinon
8610	Dichlorvos (DDVP, Dichlorvos)
7475	Dimethoate
8625	Disulfoton
7550	EPN
7570	Ethoprop
7600	Fensulfothion
7605	Fenthion
7770	Malathion
7785	Merphos
7825	Methyl parathion (Parathion, methyl)
7850	Mevinphos
7905	Naled
7955	Parathion, ethyl
7985	Phorate
8110	Ronnel
8155	Sulfotepp
8200	Tetrachlorvinphos (Stirophos, Gardona) Z-isomer
8210	Tetraethyl pyrophosphate (TEPP)
8245	Tokuthion (Prothiophos)
8275	Trichloronate

EPA 8151A

10183207

Chlorinated Herbicides by GC/ECD

Analyte Code	Analyte
8655	2,4,5-T
8545	2,4-D
8560	2,4-DB
8555	Dalapon
8595	Dicamba
8605	Dichloroprop (Dichlorprop)
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
7775	MCPA

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

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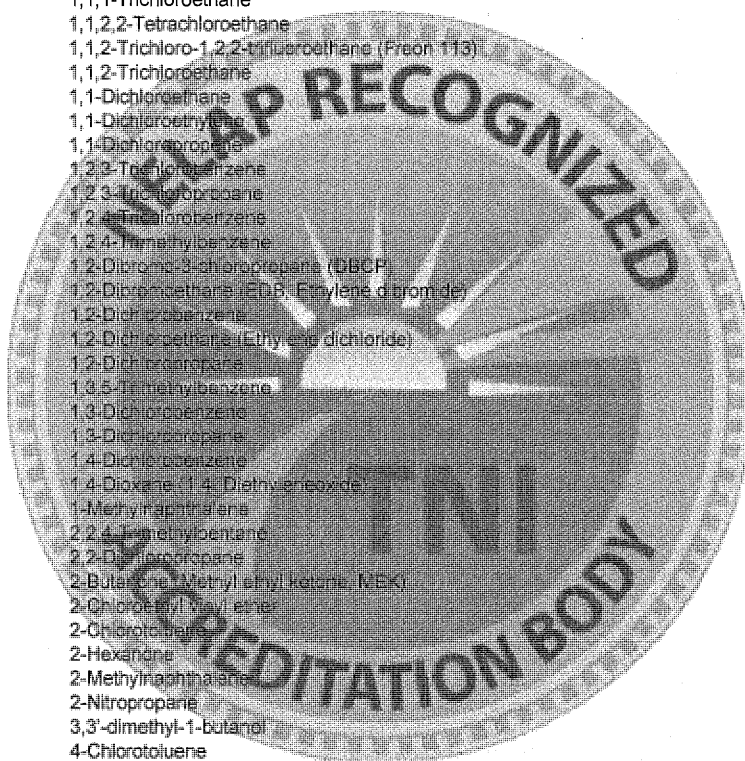
Issue Date: 01/16/2012 Expiration Date: 01/15/2013

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Customers. Please verify the current accreditation standing with ORELAP.

Analyte Code	Analyte
7780	MCPP
8650	Silvex (2,4,5-TP)

EPA 8260B	10184802	Volatile Organic Compounds by purge and trap GC/MS
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Analyte Code	Analyte
5105	1,1,1,2-Tetrachloroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropane
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4-Diethyleneoxide)
6380	1-Methylnaphthalene
5220	2,2,4-Trimethylpentane
4665	2,2-Dichloropropane
4410	2-Butanol (Methyl ethyl ketone, MEK)
4500	2-Chloroethyl Methyl ether
4535	2-Chloroethanol
4860	2-Hexanone
6385	2-Methylnaphthalene
5020	2-Nitropropane
6103	3,3'-dimethyl-1-butanol
4540	4-Chlorotoluene
4910	4-Isopropyltoluene (p-Cymene)
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4320	Acetonitrile
4325	Acrolein (Propenal)
4340	Acrylonitrile
4355	Allyl chloride (3-Chloropropene)
4375	Benzene
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4397	Bromoethane (Ethyl Bromide)
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4525	Chloroprene (2-Chloro-1,3-butadiene)
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene



ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

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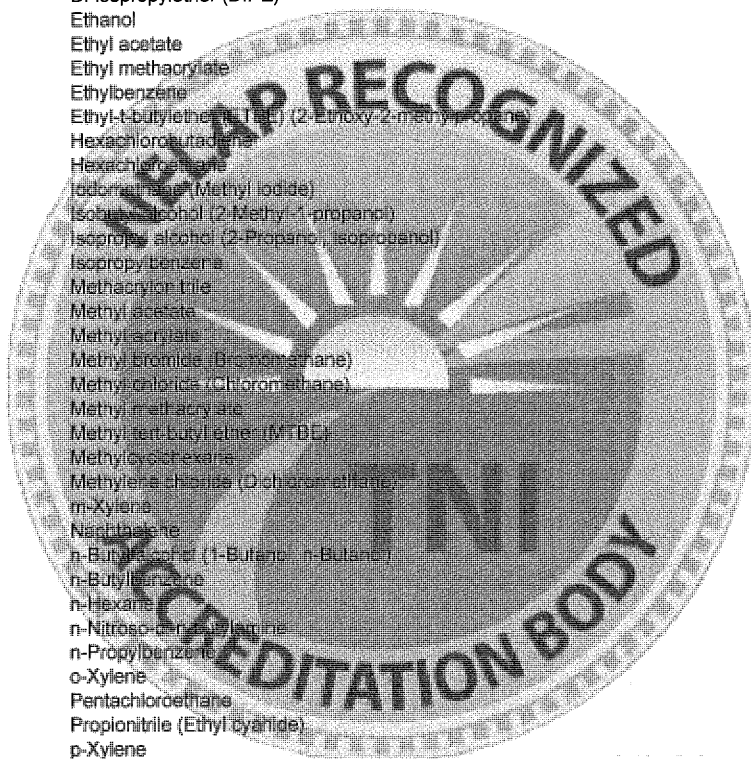
TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

As of 01/16/2012 **this list supercedes all previous lists for this certificate number.**
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Analyte Code	Analyte
4600	cis-1,4-Dichloro-2-butene
4555	Cyclohexane
4560	Cyclohexanone
4580	Dibromochloropropane
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
4725	Diethyl ether
9375	Di-isopropylether (DIPE)
4750	Ethanol
4755	Ethyl acetate
4810	Ethyl methacrylate
4765	Ethylbenzene
4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)
4835	Hexachlorobutadiene
4840	Hexachlorocyclopentadiene
4870	Iodoethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol, isopropanol)
4900	Isopropylbenzene
4925	Methacrylonitrile
4940	Methyl acetate
4945	Methylacrylate
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4965	Methylcyclohexane
4975	Methylene chloride (Dichloromethane)
5245	m-Xylene
5005	Naphthalene
4425	n-Butyl alcohol (1-Butanol, n-Butanol)
4435	n-Butylbenzene
4855	n-Hexane
5025	n-Nitrosodimethylamine
5090	n-Propylbenzene
5250	o-Xylene
5035	Pentachloroethane
5080	Propionitrile (Ethyl cyanide)
5255	p-Xylene
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethylether (TAME)
4368	tert-amyl alcohol
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
9557	tert-butyl-formate
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)



ORELAP Fields of Accreditation

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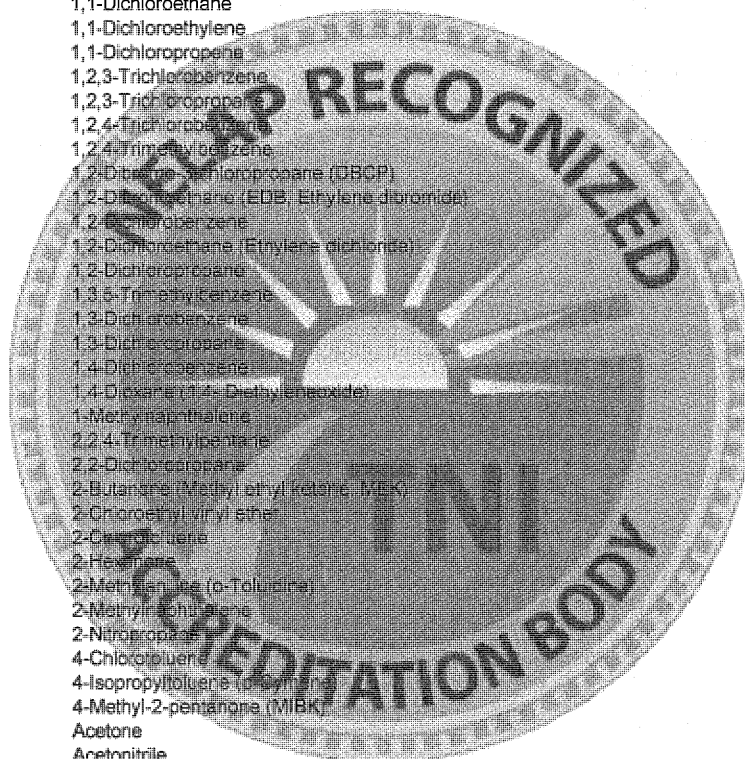
Customers. Please verify the current accreditation standing with ORELAP.

EPA 8260C

10307003

Volatile Organics: GC/MS (capillary column)

Analyte Code	Analyte
5105	1,1,1,2-Tetrachloroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-2-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4-Dioxolene oxide)
6380	1-Methylnaphthalene
5220	2,2,4-Trimethylpentane
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4500	2-Chloroethyl vinyl ether
4535	2-Chlorotoluene
4860	2-Hexanone
5145	2-Methylaniline (o-Toluidine)
6385	2-Methylnaphthalene
5020	2-Nitropropane
4540	4-Chlorotoluene
4910	4-Isopropyltoluene (p-Cymene)
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4320	Acetonitrile
4325	Acrolein (Propenal)
4340	Acrylonitrile
4355	Allyl chloride (3-Chloropropene)
4375	Benzene
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4397	Bromoethane (Ethyl Bromide)
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4525	Chloroprene (2-Chloro-1,3-butadiene)
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4600	cis-1,4-Dichloro-2-butene
4555	Cyclohexane
4560	Cyclohexanone



ORELAP Fields of Accreditation

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Analyte Code	Analyte
4580	Dibromochloropropane
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
4725	Diethyl ether
9375	Di-isopropylether (DIPE)
4750	Ethanol
4755	Ethyl acetate
4810	Ethyl methacrylate
4765	Ethylbenzene
4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)
4835	Hexachlorobutadiene
4840	Hexachloroethane
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4900	Isopropylbenzene
4925	Methanol
4940	Methyl acetate
4945	Methyl acrylate
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4965	Methylcyclohexane
4975	Methylene chloride (Dichloromethane)
5245	m-Xylene
5005	Naphthalene
4425	n-Butyl alcohol (1-Butanol, n-Butanol)
4435	n-Butylbenzene
5015	Nitrobenzene
5025	n-Nitrosodimethylamine
5090	n-Propylbenzene
5250	o-Xylene
5035	Pentachlorobutadiene
5080	Propionitrile (Ethyl cyanide)
5255	p-Xylene
6685	Safrole
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethylether (TAME)
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)

EPA 8270C

10185805

Semivolatile Organic compounds by GC/MS

Analyte Code	Analyte
6703	1,1'-Biphenyl (BZ-0)
6705	1,2,3,4-Tetrachlorobenzene
6710	1,2,3,5-Tetrachlorobenzene
6715	1,2,4,5-Tetrachlorobenzene

ORELAP Fields of Accreditation

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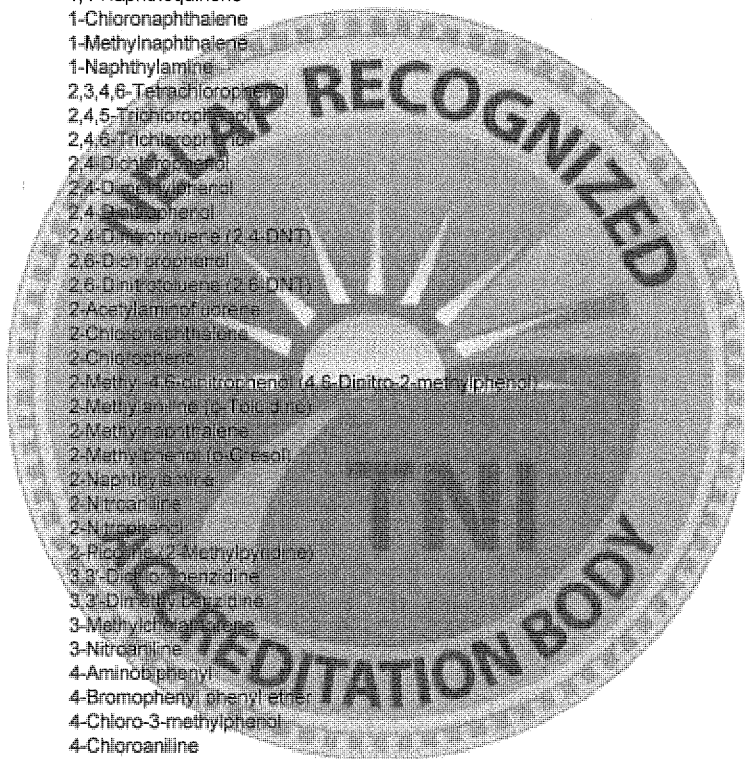
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Analyte Code	Analyte
5155	1,2,4-Trichlorobenzene
4610	1,2-Dichlorobenzene
6221	1,2-Diphenylhydrazine
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
4615	1,3-Dichlorobenzene
6160	1,3-Dinitrobenzene (1,3-DNB)
4620	1,4-Dichlorobenzene
6420	1,4-Naphthoquinone
5790	1-Chloronaphthalene
6380	1-Methylnaphthalene
6425	1-Naphthylamine
6735	2,3,4,6-Tetrachlorophenol
6835	2,4,5-Trichlorophenol
6840	2,4,6-Trichlorophenol
6000	2,4-Dichlorophenol
6130	2,4-Dimethylphenol
6175	2,4-Dichlorophenol
6185	2,4-Dinitrophenols (2,4-DNT)
6005	2,6-Dichlorophenol
6190	2,6-Dinitrophenols (2,6-DNT)
5515	2-Acetylaminofluorene
5795	2-Chloronaphthalene
5800	2-Chlorophenol
6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)
5145	2-Methylaniline (o-Toluidine)
6385	2-Methylnaphthalene
6400	2-Methylphenol (o-Cresol)
6430	2-Naphthylamine
6460	2-Nitroaniline
6490	2-Nitrophenol
5050	2-Picoline (2-Methylpyridine)
5945	3,3'-Dichlorobenzidine
6120	3,3'-Dimethylbenzidine
6355	3-Methylchlorobenzene
6465	3-Nitroaniline
5540	4-Aminobiphenyl
5660	4-Bromophenyl phenyl ether
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
6105	4-Dimethyl aminoazobenzene
6410	4-Methylphenol (p-Cresol)
6470	4-Nitroaniline
6500	4-Nitrophenol
6510	4-Nitroquinoline 1-oxide
6570	5-Nitro-o-toluidine
6115	7,12-Dimethylbenz(a) anthracene
9417	7h-Dibenzo(c, g) carbazole
6125	a-a-Dimethylphenethylamine
5500	Acenaphthene
5505	Acenaphthylene
5510	Acetophenone
5545	Aniline
5555	Anthracene
5560	Aramite
7065	Atrazine
5565	Benzal chloride
5570	Benzaldehyde
5595	Benzidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene



ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

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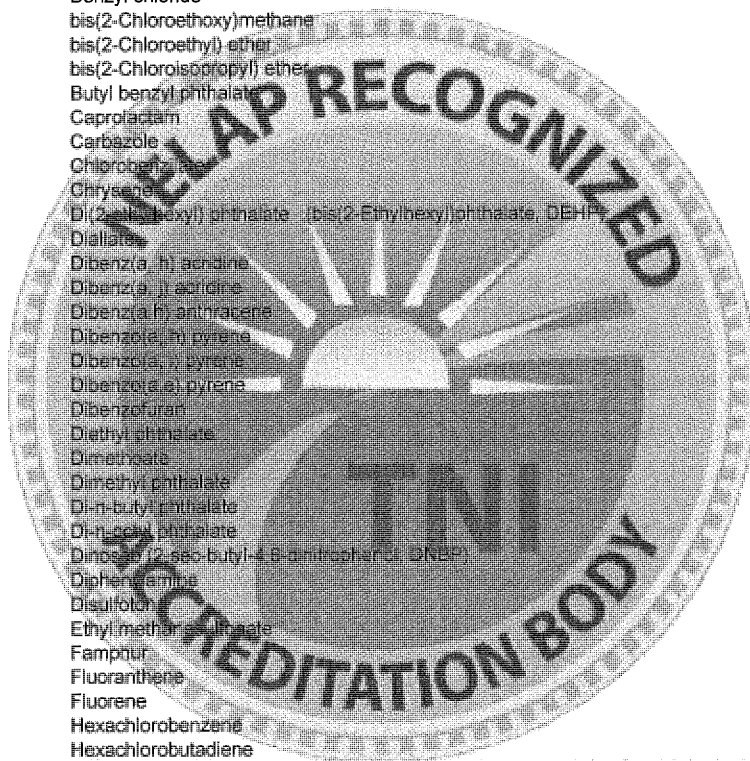
TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

As of 01/16/2012 *this list supercedes all previous lists for this certificate number.*
Customers. Please verify the current accreditation standing with ORELAP.

Analyte Code	Analyte
5590	Benzo(g,h,i)perylene
9309	Benzo(j)fluoranthene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5610	Benzoic acid
5625	Benzotrichloride
5630	Benzyl alcohol
5635	Benzyl chloride
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
5670	Butyl benzyl phthalate
7180	Caprolactam
5680	Carbazole
7260	Chlorobenzene
5855	Chrysene
6065	Di(2-chloroethyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
7405	Diallate
9354	Dibenz(a,h)acridine
5900	Dibenz(a,j)acridine
5895	Dibenz(a,h)anthracene
9348	Dibenz(a,i)pyrene
9351	Dibenz(a,j)pyrene
5890	Dibenz(a,k)pyrene
5905	Dibenzofuran
6070	Diethyl phthalate
7475	Dimethoate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
8620	Dinoseb (2,4,6-tri-tert-butyl-4-nitrophenol, DNBP)
6205	Diphenylamine
8625	Disulfoton
6260	Ethyl methanesulfonate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6290	Hexachlorophene
6295	Hexachloropropene
6315	Indeno(1,2,3-cd) pyrene
7725	Isodrin
6320	Isophorone
6325	Isosafrole
7740	Kepone
6345	Methapyrilene
6375	Methyl methanesulfonate
7825	Methyl parathion (Parathion, methyl)
5005	Naphthalene
5875	n-Decane
5015	Nitrobenzene
6525	n-Nitrosodiethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitroso-di-n-butylamine
6545	n-Nitrosodi-n-propylamine
6535	n-Nitrosodiphenylamine
6550	n-Nitrosomethylethalamine
6555	n-Nitrosomorpholine



ORELAP Fields of Accreditation

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Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

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Analyte Code	Analyte
6560	n-Nitrosopiperidine
6565	n-Nitrosopyrrolidine
6580	n-Octadecane
8290	o,o,o-Triethyl phosphorothioate
7955	Parathion, ethyl
6590	Pentachlorobenzene
5035	Pentachloroethane
6600	Pentachloronitrobenzene
6605	Pentachlorophenol
6610	Phenacetin
6615	Phenanthrene
6625	Phenol
7985	Phorate
9663	p-Phenylenediamine
6650	Pronamide (Kerb)
6665	Pyrene
5095	Pyridine
6685	Safrole
8155	Sulfotepp
8235	Thionazin (Zinophos)

EPA 8270D 10186002 Semivolatile Organic compounds by GC/MS

Analyte Code	Analyte
6703	1,1'-Biphenyl (BZ-0)
6705	1,2,3,4-Tetrachlorobenzene
6710	1,2,3,5-Tetrachlorobenzene
6715	1,2,4,5-Tetrachlorobenzene
5155	1,2,4-Trichlorobenzene
4610	1,2-Dichlorobenzene
6221	1,2-Diphenylhydrazine
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
4615	1,3-Dichlorobenzene
6160	1,3-Dinitrobenzene (1,3-DNB)
4620	1,4-Dichlorobenzene
6420	1,4-Naphthoquinone
5790	1-Chloronaphthalene
6380	1-Methylnaphthalene
6425	1-Naphthylamine
6735	2,3,4,6-Tetrachlorophenol
6835	2,4,5-Trichlorophenol
6840	2,4,6-Trichlorophenol
6000	2,4-Dichlorophenol
6130	2,4-Dimethylphenol
6175	2,4-Dinitrophenol
6185	2,4-Dinitrotoluene (2,4-DNT)
6005	2,6-Dichlorophenol
6190	2,6-Dinitrotoluene (2,6-DNT)
5515	2-Acetylaminofluorene
5795	2-Chloronaphthalene
5800	2-Chlorophenol
6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)
5145	2-Methylaniline (o-Toluidine)
6385	2-Methylnaphthalene
6400	2-Methylphenol (o-Cresol)
6430	2-Naphthylamine
6460	2-Nitroaniline
6490	2-Nitrophenol
5050	2-Picoline (2-Methylpyridine)
5945	3,3'-Dichlorobenzidine
6120	3,3'-Dimethylbenzidine

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet

TN 37122

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Analyte Code	Analyte
6355	3-Methylcholanthrene
6465	3-Nitroaniline
5540	4-Aminobiphenyl
5660	4-Bromophenyl phenyl ether
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
6105	4-Dimethyl aminoazobenzene
6410	4-Methylphenol (p-Cresol)
6470	4-Nitroaniline
6500	4-Nitrophenol
6510	4-Nitroquinoline 1-oxide
6570	5-Nitro-o-toluidine
6115	7,12-Dimethylbenz[a]anthracene
9417	7H-Dibenz[1,2-b:4,5-b']carbazole
6125	N,N-Dimethylphenethylamine
5500	Acetanilide
5505	Acenaphthylene
5510	Acetophenone
5545	Aniline
5555	Anthracene
5560	Aramite
7065	Atrazine
5565	Benzal chloride
5570	Benzaldehyde
5595	Benzidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)pyrene
9309	Benzo(k)fluoranthene
5600	Benzo(k)fluoranthene
5585	Benzo(l)fluoranthene
5610	Benzo(a)fluoranthene
5625	Benzotrifluoride
5630	Benzyl alcohol
5635	Benzyl chloride
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
5670	Butyl benzyl phthalate
7180	Caprolactam
5680	Carbazole
7260	Chlorobenzilate
5855	Chrysene
6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
7405	Diallate
9354	Dibenz(a, h) acridine
5900	Dibenz(a, j) acridine
5895	Dibenz(a,h) anthracene
9348	Dibenzo(a, h) pyrene
9351	Dibenzo(a, i) pyrene
5890	Dibenzo(a,e) pyrene
5905	Dibenzofuran
6070	Diethyl phthalate
7475	Dimethoate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
6205	Diphenylamine
8625	Disulfoton



ORELAP Fields of Accreditation

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12065 Lebanon Road
Mt. Juliet TN 37122

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Analyte Code	Analyte
6260	Ethyl methanesulfonate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6290	Hexachlorophene
6295	Hexachloropropene
6315	Indeno(1,2,3-cd) pyrene
7725	Isodrin
6320	Isophorone
6325	Isosafrole
7740	Kecone
6345	Methapyrene
6375	Methyl methanesulfonate
7825	Methyl parathion (Parathion, methyl)
5005	Naphthalene
5875	n-Decane
5015	Nitrobenzene
6525	n-Nitrosodiethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitroso-d,n-butylamine
6545	n-Nitrosodipropylamine
6535	n-Nitrosodiphenylamine
6550	n-Nitrosomethylethylamine
6555	n-Nitrosomorpholine
6560	n-Nitrosopiperidine
6565	n-Nitrosopyrrolidine
6580	n-Octadecane
8290	o,o,o'-methyl phosphorothioate
7955	Parathion, ethyl
6590	Pentachlorobenzene
5035	Pentachloroethane
6600	Pentachloronitrobenzene
6605	Pentachlorophenol
6610	Phenacetin
6615	Phenanthrene
6625	Phenol
7985	Phorate
9663	p-Phenylenediamine
6650	Pronamide (Kerb)
6665	Pyrene
5095	Pyridine
6685	Safrole
8155	Sulfotepp
8235	Thionazin (Zinophos)

EPA 8310

10187607

Polynuclear Aromatic Hydrocarbons by HPLC/UV-VIS

Analyte Code	Analyte
5500	Acenaphthene
5505	Acenaphthylene
5555	Anthracene
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5855	Chrysene

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

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12065 Lebanon Road

Mt. Juliet TN 37122

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Analyte Code	Analyte
5895	Dibenz(a,h) anthracene
6265	Fluoranthene
6270	Fluorene
6315	Indeno(1,2,3-cd) pyrene
5005	Naphthalene
6615	Phenanthrene
6665	Pyrene

EPA 8330

10189807

Nitroaromatics and Nitramines by HPLC/UV-VIS

Analyte Code	Analyte
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
6160	1,3-Dinitrobenzene (1,3-DNB)
9651	2,4,6-Trinitrotoluene (2,4,6-TNT)
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
9303	2-Amino-4,6-dinitrotoluene (2-am-dnt)
6462	2-Nitroguanidine
9507	2-Nitrotoluene
9510	3-Nitrotoluene
9306	4-Amino-2,6-dinitrotoluene (4-am-dnt)
9513	4-Nitrotoluene
6415	Methyl-2,4,6-trinitrophenylnitramine (tetryl)
5015	Nitrobenzene
6485	Nitroglycerin
9522	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)
9558	Pentaerythritoltetranitrate
9432	RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)

EPA 8330A

10190008

Nitroaromatics and Nitramines by High Performance Liquid Chromatography (HPLC)

Analyte Code	Analyte
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
6160	1,3-Dinitrobenzene (1,3-DNB)
9651	2,4,6-Trinitrotoluene (2,4,6-TNT)
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
9303	2-Amino-4,6-dinitrotoluene (2-am-dnt)
9507	2-Nitrotoluene
9510	3-Nitrotoluene
9306	4-Amino-2,6-dinitrotoluene (4-am-dnt)
9513	4-Nitrotoluene
6415	Methyl-2,4,6-trinitrophenylnitramine (tetryl)
5015	Nitrobenzene
6485	Nitroglycerin
9522	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)
9558	Pentaerythritoltetranitrate
9432	RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)

EPA 9010B

10193007

Total and Amenable Cyanide by Distillation and UV-Vis

Analyte Code	Analyte
1510	Amenable cyanide
1645	Total cyanide

EPA 9010C

10243002

Total and Amenable Cyanide by Distillation and UV-Vis

Analyte Code	Analyte
1510	Amenable cyanide
1645	Total cyanide

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road
Mt. Juliet TN 37122

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EPA 9012A 10193405 Total and Amenable Cyanide (automated colorimetric with off-line distillation)

Analyte Code	Analyte
1645	Total cyanide

EPA 9012B 10243206 Total and Amenable Cyanide (automated colorimetric with off-line distillation)

Analyte Code	Analyte
1645	Total cyanide

EPA 9020B 10194408 Total Organic Halides

Analyte Code	Analyte
2045	Total organic halides (THOX)

EPA 9030B 10195605 Acid-Soluble and Acid-Insoluble sulfides: Distillation

Analyte Code	Analyte
2005	Sulfide

EPA 9034 10196006 Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides

Analyte Code	Analyte
2005	Sulfide

EPA 9040B 10197203 pH Electrometric Measurement

Analyte Code	Analyte
1900	pH

EPA 9050A 10198808 Specific Conductance

Analyte Code	Analyte
1610	Conductivity

EPA 9056 10199403 Determination of Inorganic Anions by Ion Chromatography

Analyte Code	Analyte
1540	Bromide
1575	Chloride
1730	Fluoride
1810	Nitrate as N
1840	Nitrite as N
2000	Sulfate

EPA 9056A 10199607 Determination of Inorganic Anions by Ion Chromatography

Analyte Code	Analyte
1540	Bromide
1575	Chloride
1730	Fluoride
1805	Nitrate
1835	Nitrite
2000	Sulfate

EPA 9060 10200201 Total Organic Carbon

Analyte Code	Analyte
2040	Total organic carbon

ORELAP Fields of Accreditation

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EPA 9060A	10244801	Total Organic Carbon
Analyte Code	Analyte	
2040	Total organic carbon	
EPA 9066	10200609	Phenolics (Colorimetric, Automated 4-AAP with Distillation)
Analyte Code	Analyte	
1905	Total phenolics	
EPA RSK-175 (GC-TCD)	10212858	Fixed Gases in water by Headspace GC/TCD
Analyte Code	Analyte	
3755	Carbon dioxide	
4747	Ethane	
4752	Ethene	
4926	Methane	
NWTPH-Dx	90018409	Oregon DEQ TPH Diesel Range
Analyte Code	Analyte	
9369	Diesel range organics (DRO)	
NWTPH-Gx	90018603	Oregon DEQ TPH Gasoline Range Organics by GC/FID-PID Purge & Trap
Analyte Code	Analyte	
9408	Gasoline range organics (GRO)	
NWTPH-HCID	90013200	Oregon DEQ Total Petroleum Hydrocarbon ID
Analyte Code	Analyte	
2050	Total Petroleum Hydrocarbons (TPH)	
OA-1	90013802	Iowa TPH Gx by GC/FID Purge & Trap
Analyte Code	Analyte	
9408	Gasoline range organics (GRO)	
OA-2	90014009	Iowa TPH Dx
Analyte Code	Analyte	
9369	Diesel range organics (DRO)	
SM 2120 B 20th ED	20224004	Color by Visual Comparison
Analyte Code	Analyte	
1605	Color	
SM 2130 B 20th ED	20042404	Turbidity by Nephelometric Determination
Analyte Code	Analyte	
2055	Turbidity	
SM 2310 B 20th ED	20044206	Acidity by Titration
Analyte Code	Analyte	
1500	Acidity, as CaCO ₃	

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SM 2320 B 20th ED	20045209	Alkalinity by Titration
Analyte Code	Analyte	
1505	Alkalinity as CaCO ₃	
SM 2340 B 20th ED	20046202	Hardness by calculation
Analyte Code	Analyte	
1750	Hardness	
SM 2510 B 20th ED	20048208	Conductivity by Probe
Analyte Code	Analyte	
1610	Conductivity	
SM 2540 B 20th ED	20049007	Total Solids
Analyte Code	Analyte	
1950	Residue-total	
SM 2540 C 20th ED	20050004	Total Dissolved Solids
Analyte Code	Analyte	
1955	Residue-filterable (TDS)	
SM 2540 D 20th ED	20050800	Total Suspended Solids
Analyte Code	Analyte	
1960	Residue-nonfilterable (TSS)	
SM 2540 F 20th ED	20051803	Settleable Solids
Analyte Code	Analyte	
1965	Residue-settleable	
SM 2540 G 20th ED	20005258	Total, Fixed, and Volatile Solids in Solid and Semisolid Samples
Analyte Code	Analyte	
1725	Total, fixed, and volatile residue	
SM 3500-Fe B 20th ED	20068604	Iron by Colorimetric Method
Analyte Code	Analyte	
1070	Iron	
SM 4110 B 20th ED	20076602	Anions by Ion Chromatography with Chemical Suppression of Eluent
Analyte Code	Analyte	
1575	Chloride	
1730	Fluoride	
1810	Nitrate as N	
1820	Nitrate-nitrite	
1840	Nitrite as N	
2000	Sulfate	
SM 4500-Cl G 20th ED	20081203	Residual Chlorine by DPD Colorimetric Determination
Analyte Code	Analyte	
1940	Total residual chlorine	

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SM 4500-CN C 20th ED	20091605	Cyanide, Total After Distillation
Analyte Code	Analyte	
1635	Cyanide	
SM 4500-CN E 20th ED	20092404	Cyanide by Colorimetric Determination
Analyte Code	Analyte	
1635	Cyanide	
1645	Total cyanide	
SM 4500-CN G 20th ED	20093203	Cyanide Amenable to Chlorination after Distillation
Analyte Code	Analyte	
1510	Amenable cyanide	
SM 4500-H+ B 20th ED	20104807	pH by Probe
Analyte Code	Analyte	
1900	pH	
SM 4500-NH3 B 20th ED	20105606	Ammonia Nitrogen Distillation
Analyte Code	Analyte	
1515	Ammonia as N	
SM 4500-NH3 G 20th ED	20111006	Ammonia by Automated Phenate
Analyte Code	Analyte	
1515	Ammonia as N	
SM 4500-NO3 ⁻ F 20th ED	20116205	Nitrate Nitrogen by Automated Cadmium Reduction Method
Analyte Code	Analyte	
1820	Nitrate-nitrite	
SM 4500-Norg C 20th ED	20119602	Nitrogen (Organic) by Semi-micro Kjeldahl Method
Analyte Code	Analyte	
1790	Kjeldahl nitrogen	
1795	Kjeldahl nitrogen - total	
SM 4500-O C 19th ED	20120201	Dissolved Oxygen by Azide Modification
Analyte Code	Analyte	
1880	Oxygen, dissolved	
SM 4500-O G 20th ED	20121204	Dissolved Oxygen by Membrane Electrode Method
Analyte Code	Analyte	
1880	Oxygen, dissolved	
SM 4500-P B 5 20th ED	20123200	Phosphorus by Persulfate Digestion Method
Analyte Code	Analyte	
1910	Phosphorus, total	
SM 4500-P E 20th ED	20123802	Phosphorus by Ascorbic Acid Reduction
Analyte Code	Analyte	

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Analyte Code	Analyte
1870	Orthophosphate as P
1910	Phosphorus, total
SM 4500-S2 ⁻ D 20th ED	20125400 Sulfide by Methylene Blue Method
Analyte Code	Analyte
2005	Sulfide
SM 4500-SO3 ⁻ B 20th ED	20130205 Sulfite by Iodometric Method
Analyte Code	Analyte
2015	Sulfite-SO3
SM 5210 B 20th ED	20134809 Biochemical Oxygen Demand, 5-Day (BOD5)
Analyte Code	Analyte
1530	Biochemical oxygen demand
1555	Carbonaceous BOD: CBOD
SM 5220 D 20th ED	20136407 Chemical Oxygen Demand by Closed Reflux and Colorimetric Determination
Analyte Code	Analyte
1565	Chemical oxygen demand
SM 5310 B 20th ED	20137400 Total Organic Carbon by Combustion Infra-red Method
Analyte Code	Analyte
2040	Total organic carbon
SM 5310 C 20th ED	20138403 Total Organic Carbon by Persulfate-Ultraviolet Oxidation Method
Analyte Code	Analyte
2040	Total organic carbon
SM 5320 B 20th ED	20140403 Absorbable Organic Halogen
Analyte Code	Analyte
2045	Total organic halides (TOX)
SM 5520 B 20th ED	20141202 Oil and Grease by Extraction and Gravimetric Determination
Analyte Code	Analyte
1860	Oil & Grease
SM 5540 C 20th ED	20144609 Surfactants as MBAS
Analyte Code	Analyte
2025	Surfactants - MBAS
SM 6200 B 20th ED	20146605 Volatile Organic Compounds by purge and trap GC/MS
Analyte Code	Analyte
5105	1,1,1,2-Tetrachloroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

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12065 Lebanon Road

Mt. Juliet

TN 37122

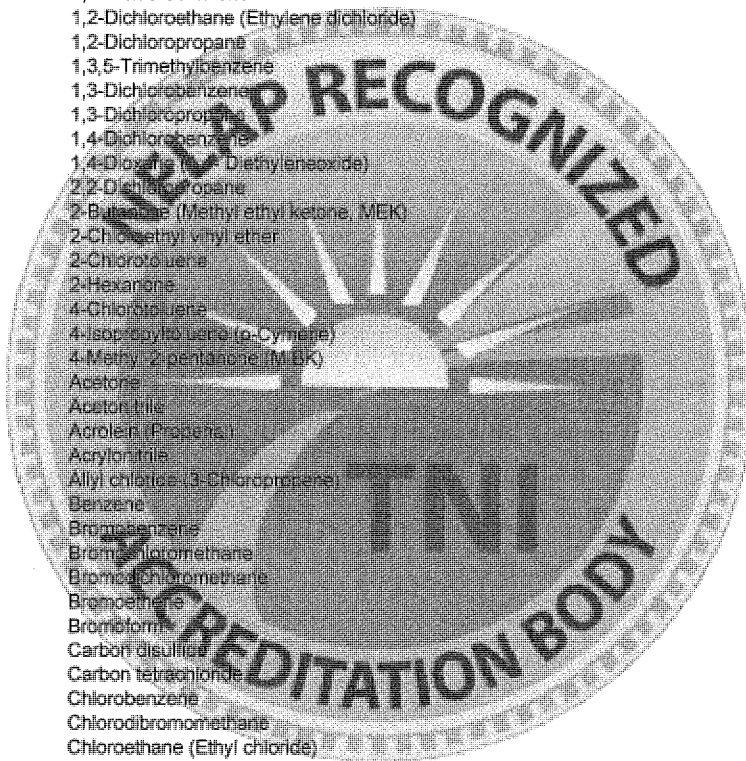
Issue Date: 01/16/2012

Expiration Date: 01/15/2013

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Analyte Code	Analyte
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5182	1,2,3-Trimethylbenzene
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4-Dioxolane)
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4500	2-Chloroethyl vinyl ether
4535	2-Chlorotoluene
4860	2-Hexanone
4540	4-Chlorotoluene
4910	4-Isopropyltoluene (p-Cymene)
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4320	Acetonitrile
4325	Acrolein (Propenal)
4340	Acrylonitrile
4355	Allyl chloride (3-Chloropropene)
4375	Benzene
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4398	Bromoethene
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4525	Chloroprene (2-Chloro-1,3-butadiene)
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4600	cis-1,4-Dichloro-2-butene
4560	Cyclohexanone
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
4725	Diethyl ether
9375	Di-isopropylether (DIPE)
4750	Ethanol
4755	Ethyl acetate
4810	Ethyl methacrylate
4765	Ethylbenzene
4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)
4835	Hexachlorobutadiene
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4900	Isopropylbenzene
4925	Methacrylonitrile
4950	Methyl bromide (Bromomethane)



ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

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Analyte Code	Analyte
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4975	Methylene chloride (Dichloromethane)
5245	m-Xylene
5005	Naphthalene
4435	n-Butylbenzene
4855	n-Hexane
5090	n-Propylbenzene
5250	o-Xylene
5035	Pentachloroethane
5080	Propionitrile (Ethyl cyanide)
5255	p-Xylene
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethyl ether (TAME)
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane; Freon 11)
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)

SM 6200 C 20th ED	20147200	Volatile Aromatic Organic Compounds by GC/PID Purge & Trap
Analyte Code	Analyte	
4375	Benzene	
4765	Ethylbenzene	
5000	Methyl tert-butyl ether (MTBE)	
4420	tert-Butyl alcohol	
5140	Toluene	
5260	Xylene (total)	

SM 6630 B 20th ED	20153008	Organochlorine Pesticides by Liquid/Liquid Extraction and GC/ECD
Analyte Code	Analyte	
8295	Trifluralin (Treflan)	

SM 6630 C 20th ED	20153804	Organochlorine Pesticides and PCBs by Liquid/Liquid Extraction and GC/ECD
Analyte Code	Analyte	
7355	4,4'-DDD	
7360	4,4'-DDE	
7365	4,4'-DDT	
7025	Aldrin	
7110	alpha-BHC (alpha-Hexachlorocyclohexane)	
7240	alpha-Chlordane	
7115	beta-BHC (beta-Hexachlorocyclohexane)	
7250	Chlordane (tech.)	
7105	delta-BHC	
7470	Dieldrin	
7510	Endosulfan I	
7515	Endosulfan II	

ORELAP Fields of Accreditation

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Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012

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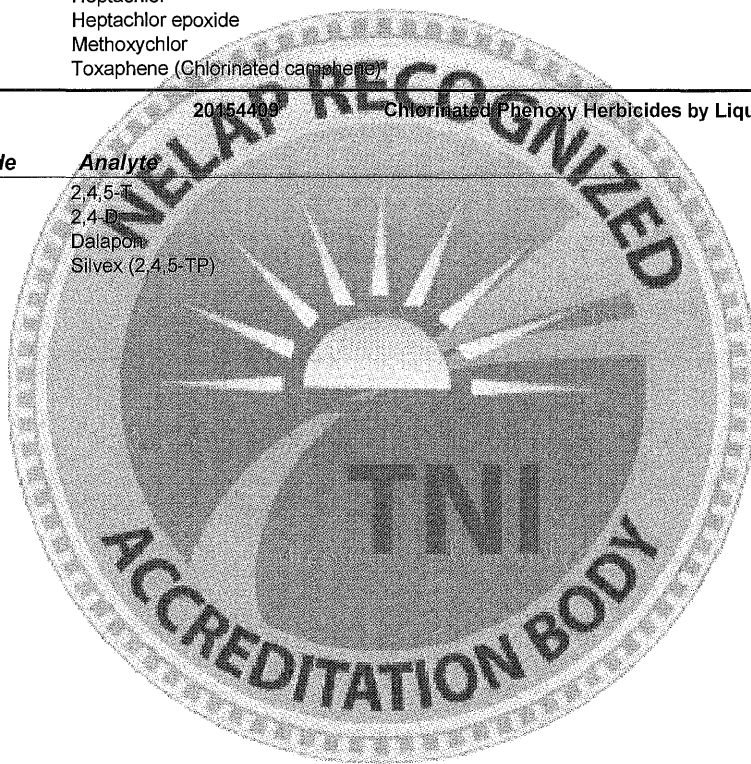
Analyte Code	Analyte
7520	Endosulfan sulfate
7540	Endrin
7530	Endrin aldehyde
7535	Endrin ketone
7575	Etridiazole
7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)
7245	gamma-Chlordane
7685	Heptachlor
7690	Heptachlor epoxide
7810	Methoxychlor
8250	Toxaphene (Chlorinated camphene)

SM 6640 B 19th ED

20154409

Chlorinated Phenoxy Herbicides by Liquid-Liquid and GC/ECD

Analyte Code	Analyte
8655	2,4,5-T
8545	2,4-D
8555	Dalapon
8650	Silvex (2,4,5-TP)



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Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet

TN 37122

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MATRIX : Solids

Reference	Code	Description
EPA 1010	10116606	Pensky-Martens Closed-Cup Method for Determining Ignitability
<i>Analyte Code</i>	<i>Analyte</i>	
1780	Ignitability	
EPA 1010A	10234807	Pensky-Martens Closed-Cup Method for Determining Ignitability
<i>Analyte Code</i>	<i>Analyte</i>	
1780	Ignitability	
EPA 1030	10117204	Ignitability of Solids
<i>Analyte Code</i>	<i>Analyte</i>	
1780	Ignitability	
EPA 1110	10118000	Corrosivity Toward Steel
<i>Analyte Code</i>	<i>Analyte</i>	
1615	Corrosivity	
EPA 1110A	10235208	Corrosivity Toward Steel
<i>Analyte Code</i>	<i>Analyte</i>	
1615	Corrosivity	
EPA 1311	10118806	Toxicity Characteristic Leaching Procedure
<i>Analyte Code</i>	<i>Analyte</i>	
8031	Extraction/Preparation	
EPA 1312	10119003	Synthetic Precipitation Leaching Procedure
<i>Analyte Code</i>	<i>Analyte</i>	
8031	Extraction/Preparation	
EPA 3051	10135805	Microwave Assisted Acid Digestion of Sediments, Sludges, Soils, and Oils
<i>Analyte Code</i>	<i>Analyte</i>	
8031	Extraction/Preparation	
EPA 3051A	10136002	Microwave Assisted Acid Digestion of Sediments, Sludges, Soils, and Oils
<i>Analyte Code</i>	<i>Analyte</i>	
8031	Extraction/Preparation	
EPA 3052	10136206	Microwave Assisted Acid Digestion of Siliceous and Organically Based Matrices
<i>Analyte Code</i>	<i>Analyte</i>	
8031	Extraction/Preparation	
EPA 3060A	10136604	Alkaline Digestion for Hexavalent Chromium
<i>Analyte Code</i>	<i>Analyte</i>	
8031	Extraction/Preparation	

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ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

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EPA 3540C	10140202	Soxhlet Extraction
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 3546	10141205	Microwave Extraction
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 3550B	10141807	Ultrasonic Extraction
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 3550C	10142004	Ultrasonic Extraction
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 3580A	10143007	Waste Dilution
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 3585	10143201	Waste Dilution for Volatile Organics
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 3610B	10144602	Alumina Cleanup
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 3611B	10145207	Alumina Column Cleanup and separation of petroleum wastes
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 3620C	10146006	Florisil Cleanup
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 3630C	10146802	Silica gel cleanup
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 3660B	10148400	Sulfur cleanup
Analyte Code	Analyte	
8031	Extraction/Preparation	
EPA 3665A	10148808	Sulfuric Acid / permanganate Cleanup
Analyte Code	Analyte	
8031	Extraction/Preparation	

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

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EPA 5035A 10284807 Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples

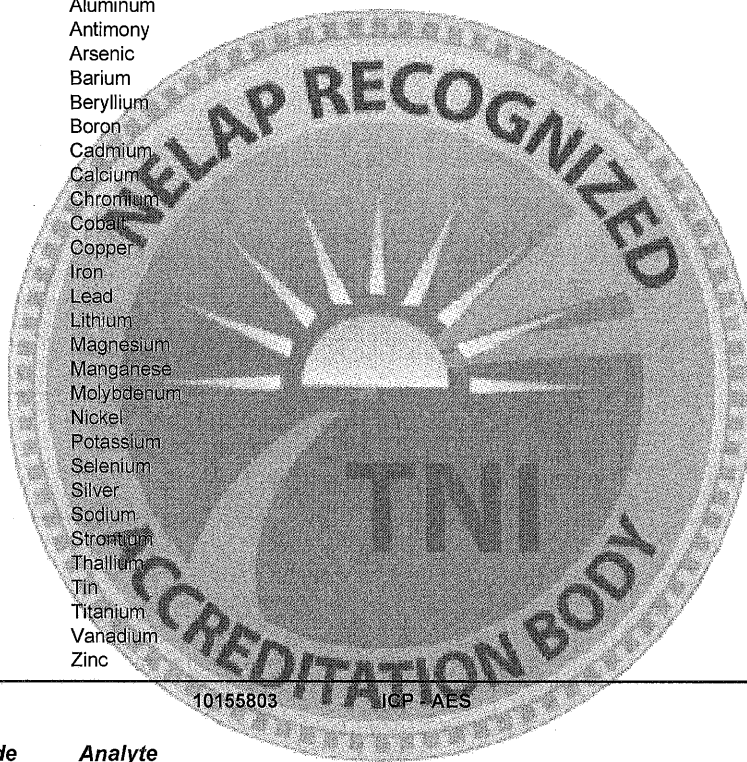
Analyte Code	Analyte
8031	Extraction/Preparation

EPA 6010B 10155609 ICP - AES

Analyte Code	Analyte
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead
1080	Lithium
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 6010C 10155803 ICP - AES

Analyte Code	Analyte
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead
1080	Lithium
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver



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Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet

TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

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Analyte Code	Analyte
1155	Sodium
1160	Strontium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 6020

10156000

Inductively Coupled Plasma-Mass Spectrometry

Analyte Code	Analyte
1005	Antimony
1010	Arsenic
1015	Barium
1030	Cadmium
1040	Chromium
1055	Copper
1075	Lead
1090	Manganese
1100	Molybdenum
1105	Nickel
1140	Selenium
1150	Silver
1165	Thallium
1175	Tin
1185	Vanadium
1190	Zinc

EPA 6020A

10156408

Inductively Coupled Plasma-Mass Spectrometry

Analyte Code	Analyte
1005	Antimony
1010	Arsenic
1015	Barium
1030	Cadmium
1040	Chromium
1055	Copper
1075	Lead
1090	Manganese
1100	Molybdenum
1105	Nickel
1140	Selenium
1150	Silver
1165	Thallium
1175	Tin
1185	Vanadium
1190	Zinc

EPA 7196A

10162400

Chromium Hexavalent colorimetric

Analyte Code	Analyte
1045	Chromium VI

EPA 7471A

10166208

Mercury in Solid Waste by Cold Vapor Atomic Absorption

Analyte Code	Analyte
1095	Mercury

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EPA CODE: TN00003

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Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

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EPA 7471B 10166402 Mercury by Cold Vapor Atomic Absorption

Analyte Code	Analyte
1095	Mercury

EPA 8015B 10173601 Non-halogenated organics using GC/FID

Analyte Code	Analyte
9369	Diesel range organics (DRO)
4750	Ethanol
9408	Gasoline range organics (GRO)
4930	Methanol

EPA 8015D 10305609 Nonhalogenated Organics Using GC/FID

Analyte Code	Analyte
9369	Diesel range organics (DRO)
4750	Ethanol
9408	Gasoline range organics (GRO)
4930	Methanol

EPA 8021B 10174808 Aromatic and Halogenated Volatiles by GC with PID and/or ECD Purge & Trap

Analyte Code	Analyte
4375	Benzene
4765	Ethylbenzene
5000	Methyl tert-butyl ether (MTBE)
5245	m-Xylene
5250	o-Xylene
5255	p-Xylene
5140	Toluene
5260	Xylene (total)

EPA 8081A 10478606 Organochlorine Pesticides by GC/ECD

Analyte Code	Analyte
7355	4,4'-DDD
7360	4,4'-DDE
7365	4,4'-DDT
7005	Alachlor
7025	Aldrin
7110	alpha-BHC (alpha-Hexachlorocyclohexane)
7240	alpha-Chlordane
7115	beta-BHC (beta-Hexachlorocyclohexane)
7250	Chlordane (tech.)
7265	Chloroneb
7310	Chlorthalonil (Daconil)
7105	delta-BHC
7470	Dieldrin
7510	Endosulfan I
7515	Endosulfan II
7520	Endosulfan sulfate
7540	Endrin
7530	Endrin aldehyde
7535	Endrin ketone
7575	Etridiazole
7120	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)
7245	gamma-Chlordane
7685	Heptachlor
7690	Heptachlor epoxide
6275	Hexachlorobenzene

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet TN 37122

Issue Date: 01/16/2012

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Analyte Code	Analyte
6285	Hexachlorocyclopentadiene
7810	Methoxychlor
7975	Permethrin (total)
8045	Propachlor (Ramrod)
8250	Toxaphene (Chlorinated camphene)
8295	Trifluralin (Treflan)

EPA 8081B

10178800

Organochlorine Pesticides by GC/ECD

Analyte Code	Analyte
7355	4,4'-DDD
7360	4,4'-DDE
7365	4,4'-DDT
7005	Alachlor
7025	Aldrin
7110	alpha-BHC (alpha-Hexachlorocyclohexane)
7240	alpha-Chlordane
7115	beta-BHC (beta-Hexachlorocyclohexane)
7250	Chlordane (tech.)
7265	Chloroneb
7310	Chlorthalonil (Daconil)
7105	delta-BHC
7470	Dieldrin
7510	Endosulfan I
7515	Endosulfan II
7520	Endosulfan sulfate
7540	Endrin
7530	Endrin aldehyde
7535	Endrin ketone
7575	Etridiazole
7120	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)
7245	gamma-Chlordane
7685	Heptachlor
7690	Heptachlor epoxide
6275	Hexachlorobenzene
6285	Hexachlorocyclopentadiene
7810	Methoxychlor
7975	Permethrin (total)
8045	Propachlor (Ramrod)
8250	Toxaphene (Chlorinated camphene)
8295	Trifluralin (Treflan)

EPA 8082

10179007

Polychlorinated Biphenyls (PCBs) by GC/ECD

Analyte Code	Analyte
8880	Aroclor-1016 (PCB-1016)
8885	Aroclor-1221 (PCB-1221)
8890	Aroclor-1232 (PCB-1232)
8895	Aroclor-1242 (PCB-1242)
8900	Aroclor-1248 (PCB-1248)
8905	Aroclor-1254 (PCB-1254)
8910	Aroclor-1260 (PCB-1260)

EPA 8082A

10179201

Polychlorinated Biphenyls (PCBs) by GC/ECD

Analyte Code	Analyte
8880	Aroclor-1016 (PCB-1016)
8885	Aroclor-1221 (PCB-1221)
8890	Aroclor-1232 (PCB-1232)
8895	Aroclor-1242 (PCB-1242)

ORELAP Fields of Accreditation

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Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet

TN 37122

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Analyte Code	Analyte
8900	Aroclor-1248 (PCB-1248)
8905	Aroclor-1254 (PCB-1254)
8910	Aroclor-1260 (PCB-1260)

EPA 8141A	10182000	Organophosphorous Pesticides by GC/NPD
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Analyte Code	Analyte
7075	Azinphos-methyl (Guthion)
7125	Bolstar (Sulprofos)
7300	Chlorpyrifos
7315	Coumaphos
7395	Demeton-o
7385	Demeton-s
7410	Diazinon
8610	Dichlorvos (DDVP, Dichlorvos)
7475	Dimethoate
8625	Disulfoton
7550	EPN
7570	Ethoprop
7600	Fensulfothion
7605	Fenthion
7770	Malathion
7785	Merphos
7825	Methyl parathion (Parathion, methyl)
7850	Mevinphos
7905	Naled
7985	Phorate
8110	Ronnel
8155	Sulfotepp
8200	Tetrachlorvinphos (Stirophos, Gardona) Z-isomer
8210	Tetraethyl pyrophosphate (TEPP)
8245	Tokuthion (Prothiophos)
8275	Trichloronate

EPA 8141B	10182204	Organophosphorous Pesticides by GC/NPD
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Analyte Code	Analyte
7075	Azinphos-methyl (Guthion)
7125	Bolstar (Sulprofos)
7300	Chlorpyrifos
7315	Coumaphos
7395	Demeton-o
7385	Demeton-s
7410	Diazinon
8610	Dichlorvos (DDVP, Dichlorvos)
7475	Dimethoate
8625	Disulfoton
7550	EPN
7570	Ethoprop
7600	Fensulfothion
7605	Fenthion
7770	Malathion
7785	Merphos
7825	Methyl parathion (Parathion, methyl)
7850	Mevinphos
7905	Naled
7985	Phorate
8110	Ronnel
8155	Sulfotepp
8200	Tetrachlorvinphos (Stirophos, Gardona) Z-isomer
8210	Tetraethyl pyrophosphate (TEPP)

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Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet

TN 37122

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Analyte Code	Analyte
8245	Tokuthion (Prothiophos)
8275	Trichloronate

EPA 8151A	10183207	Chlorinated Herbicides by GC/ECD
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Analyte Code	Analyte
8655	2,4,5-T
8545	2,4-D
8560	2,4-DB
8555	Dalapon
8595	Dicamba
8605	Dichloroprop (Dichloroprop)
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
7775	MCPA
7780	MCPP
8650	Silvex (2,4,6-TP)

EPA 8260B	10184802	Volatile Organic Compounds by purge and trap GC/MS
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Analyte Code	Analyte
5105	1,1,1,2-Tetrachloroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropane
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4-Diethyleneoxide)
6380	1-Methylnaphthalene
5220	2,2,4-Trimethylpentane
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4500	2-Chloroethyl vinyl ether
4535	2-Chlorotoluene
4860	2-Hexanone
6385	2-Methylnaphthalene
5020	2-Nitropropane
6103	3,3'-dimethyl-1-butanol
4540	4-Chlorotoluene
4910	4-Isopropyltoluene (p-Cymene)
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4320	Acetonitrile
4325	Acrolein (Propenal)
4340	Acrylonitrile
4355	Allyl chloride (3-Chloropropene)
4375	Benzene

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet

TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

As of 01/16/2012 this list supercedes all previous lists for this certificate number.

Customers. Please verify the current accreditation standing with ORELAP.

Analyte Code	Analyte
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4397	Bromoethane (Ethyl Bromide)
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4525	Chloroprene (2-Chloro-1,3-butadiene)
4645	cis-1,2-Dichloroethene
4680	cis-1,3-Dichloropropene
4600	cis-1,4-Dichloro-2-butene
4555	Cyclohexane
4560	Cyclohexanone
4580	Dibromochloropropane
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
4725	Diethyl ether
9375	Di-isopropyl ether (DIPE)
4750	Ethanol
4755	Ethyl acetate
4810	Ethyl methacrylate
4765	Ethyl benzene
4770	Ethyl tert-butyl ether (ETBE) (2-Ethoxy-2-methylpropane)
4835	Hexachlorobutadiene
4840	Hexachloroethane
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol, isopropanol)
4900	Isopropylbenzene
4925	Methacrylonitrile
4940	Methyl acetate
4945	Methyl acrylate
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4965	Methylcyclohexane
4975	Methylene chloride (Dichloromethane)
5245	m-Xylene
5005	Naphthalene
4425	n-Butyl alcohol (1-Butanol, n-Butanol)
4435	n-Butylbenzene
4855	n-Hexane
5025	n-Nitroso-di-n-butylamine
5090	n-Propylbenzene
5250	o-Xylene
5035	Pentachloroethane
5080	Propionitrile (Ethyl cyanide)
5255	p-Xylene
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethylether (TAME)
4368	tert-amyl alcohol
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
9557	tert-butyl-formate
5115	Tetrachloroethylene (Perchloroethylene)

ORELAP Fields of Accreditation

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EPA CODE: TN00003

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Analyte Code	Analyte
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)

EPA 8260C

10307003

Volatile Organics: GC/MS (capillary column)

Analyte Code	Analyte
5105	1,1,1,2-Tetrachloroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4-Diethyleneoxide)
6380	1-Methylnaphthalene
5220	2,2,4-Trimethylpentane
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4500	2-Chloroethyl vinyl ether
4535	2-Chlorotoluene
4860	2-Hexanone
5145	2-Methylaniline (o-Toluidine)
6385	2-Methylnaphthalene
5020	2-Nitropropane
4540	4-Chlorotoluene
4910	4-Isopropyltoluene (p-Cymene)
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4320	Acetonitrile
4325	Acrolein (Propenal)
4340	Acrylonitrile
4355	Allyl chloride (3-Chloropropene)
4375	Benzene
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4397	Bromoethane (Ethyl Bromide)
4400	Bromoform
4450	Carbon disulfide

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

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Mt. Juliet

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Customers. Please verify the current accreditation standing with ORELAP.

Analyte Code	Analyte
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4525	Chloroprene (2-Chloro-1,3-butadiene)
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4600	cis-1,4-Dichloro-2-butene
4555	Cyclohexane
4560	Cyclohexanone
4580	Dibromochloropropane
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
4725	Diethyl ether
9375	Diisopropyl ether (DIPE)
4750	Ethanol
4755	Ethyl acetate
4810	Ethyl methacrylate
4765	Ethylbenzene
4770	Ethyl tert-butyl ether (ETBE) (2-Ethoxy-2-methylpropane)
4835	Hexachlorobutadiene
4840	Hexachloroethane
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4900	Isopropylbenzene
4925	Methacrylonitrile
4940	Methyl acetate
4945	Methyl acrylate
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4965	Methylcyclohexane
4975	Methylene chloride (Dichloromethane)
5245	m-Xylene
5005	Naphthalene
4425	n-Butyl alcohol (1-Butanol, n-Butanol)
4435	n-Butylbenzene
5015	Nitrobenzene
5025	n-Nitroso-di-n-butylamine
5090	n-Propylbenzene
5250	o-Xylene
5035	Pentachloroethane
5080	Propionitrile (Ethyl cyanide)
5255	p-Xylene
6685	Safrole
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethylether (TAME)
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

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TN 37122

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Customers. Please verify the current accreditation standing with ORELAP.

Analyte Code	Analyte
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)

EPA 8270C	10185805	Semivolatile Organic compounds by GC/MS
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Analyte Code	Analyte
6703	1,1'-Biphenyl (BZ-0)
6705	1,2,3,4-Tetrachlorobenzene
6710	1,2,3,5-Tetrachlorobenzene
6715	1,2,4,5-Tetrachlorobenzene
5155	1,2,4-Trichlorobenzene
4610	1,2-Dichlorobenzene
6221	1,2-Diphenylhydrazine
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
4615	1,3-Dichlorobenzene
6160	1,3-Dinitrobenzene (1,3-DNB)
4620	1,4-Dichlorobenzene
6420	1,4-Naphthoquinone
5790	1-Chloronaphthalene
6380	1-Methylnaphthalene
6425	1-Naphthylamine
6735	2,3,4,6-Tetrachlorophenol
6835	2,4,6-Trichlorophenol
6840	2,4,6-Trichlorophenol
6000	2,4-Dichlorophenol
6130	2,4-Dimethylphenol
6175	2,4-Dinitrophenol
6185	2,4-Dinitrotoluene (2,4-DNT)
6005	2,6-Dichlorophenol
6190	2,6-Dinitrotoluene (2,6-DNT)
5515	2-Acetylaminofluorene
5795	2-Chloronaphthalene
5800	2-Chlorophenol
6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)
5145	2-Methylaniline (o-Toluidine)
6385	2-Methylnaphthalene
6400	2-Methylphenol (o-Cresol)
6430	2-Naphthylamine
6460	2-Nitroaniline
6490	2-Nitrophenol
5050	2-Picoline (2-Methylpyridine)
5945	3,3'-Dichlorobenzidine
6120	3,3'-Dimethylbenzidine
6355	3-Methylcholanthrene
6465	3-Nitroaniline
5540	4-Aminobiphenyl
5660	4-Bromophenyl phenyl ether
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
6105	4-Dimethyl aminoazobenzene
6410	4-Methylphenol (p-Cresol)
6470	4-Nitroaniline
6500	4-Nitrophenol
6510	4-Nitroquinoline 1-oxide
6570	5-Nitro-o-toluidine
6115	7,12-Dimethylbenz(a) anthracene
9417	7h-Dibenzo(c, g) carbazole
6125	a-a-Dimethylphenethylamine
5500	Acenaphthene

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

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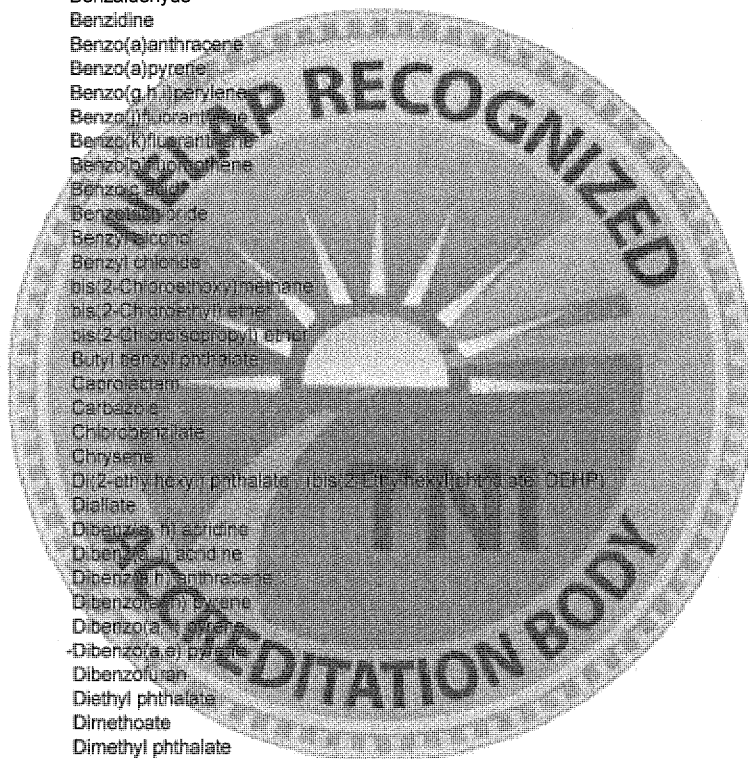
TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

As of 01/16/2012 *this list supercedes all previous lists for this certificate number.*
Customers. Please verify the current accreditation standing with ORELAP.

Analyte Code	Analyte
5505	Acenaphthylene
5510	Acetophenone
5545	Aniline
5555	Anthracene
5560	Aramite
7065	Atrazine
5565	Benzal chloride
5570	Benzaldehyde
5595	Benzidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
9309	Benzo(j)fluoranthene
5600	Benzo(k)fluoranthene
5585	Benzo(l)fluoranthene
5610	Benzocyclobutene
5625	Benzocyclopentadiene
5630	Benzocyclohexene
5635	Benzyl chloride
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
5670	Butyl benzyl phthalate
7180	Carbazole
5680	Carbazole
7260	Chlorobenzilate
5855	Chrysene
6065	Di(2-ethylhexyl) phthalate (bis(2-ethylhexyl)phthalate DEHP)
7405	Diallate
9354	Dibenz(a,h)acridine
5900	Dibenz(a,h)anthracene
5895	Dibenz(a,h)anthracene
9348	Dibenz(a,h)pyrene
9351	Dibenz(a,h)pyrene
5890	Dibenz(a,i)pyrene
5905	Dibenzofuran
6070	Diethyl phthalate
7475	Dimethoate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
6205	Diphenylamine
8625	Disulfoton
6260	Ethyl methanesulfonate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6290	Hexachlorophene
6295	Hexachloropropene
6315	Indeno(1,2,3-cd) pyrene
7725	Isodrin
6320	Isophorone
6325	Isosafrole
7740	Kepone
6345	Methapyrilene
6375	Methyl methanesulfonate



ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

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Mt. Juliet

TN 37122

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Analyte Code	Analyte
7825	Methyl parathion (Parathion, methyl)
5005	Naphthalene
5875	n-Decane
5015	Nitrobenzene
6525	n-Nitrosodiethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitroso-di-n-butylamine
6545	n-Nitrosodi-n-propylamine
6535	n-Nitrosodiphenylamine
6550	n-Nitrosomethylethylamine
6555	n-Nitrosomorpholine
6560	n-Nitrosopiperidine
6565	n-Nitrosopyrrolidine
6580	n-Octadecane
8290	o,o,o-Triethylphosphorothioate
7955	Parathion methyl
6590	Pentachlorobenzene
5035	Pentachloroethane
6600	Pentachloronitrobenzene
6605	Pentachlorophenol
6610	Phenacetin
6615	Phenanthrene
6625	Phenol
7985	Phorate
9663	p-Phenylenediamine
6650	Pronamide (Kerb)
6665	Pyrene
5095	Pyridine
6685	Safrole
8155	Sulfotepo
8235	Thionazin (Zinophos)

EPA 8270C SIM 10242407 Semivolatile Organic compounds by GC/MS Selective Ion Monitoring

Analyte Code	Analyte
6380	1-Methylnaphthalene
6385	2-Methylnaphthalene
5500	Acenaphthene
5505	Acenaphthylene
5555	Anthracene
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5855	Chrysene
5895	Dibenz(a,h) anthracene
6265	Fluoranthene
6270	Fluorene
6315	Indeno(1,2,3-cd) pyrene
5005	Naphthalene
6615	Phenanthrene
6665	Pyrene

EPA 8270D 10186002 Semivolatile Organic compounds by GC/MS

Analyte Code	Analyte
6703	1,1'-Biphenyl (BZ-0)
6705	1,2,3,4-Tetrachlorobenzene
6710	1,2,3,5-Tetrachlorobenzene
6715	1,2,4,5-Tetrachlorobenzene

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

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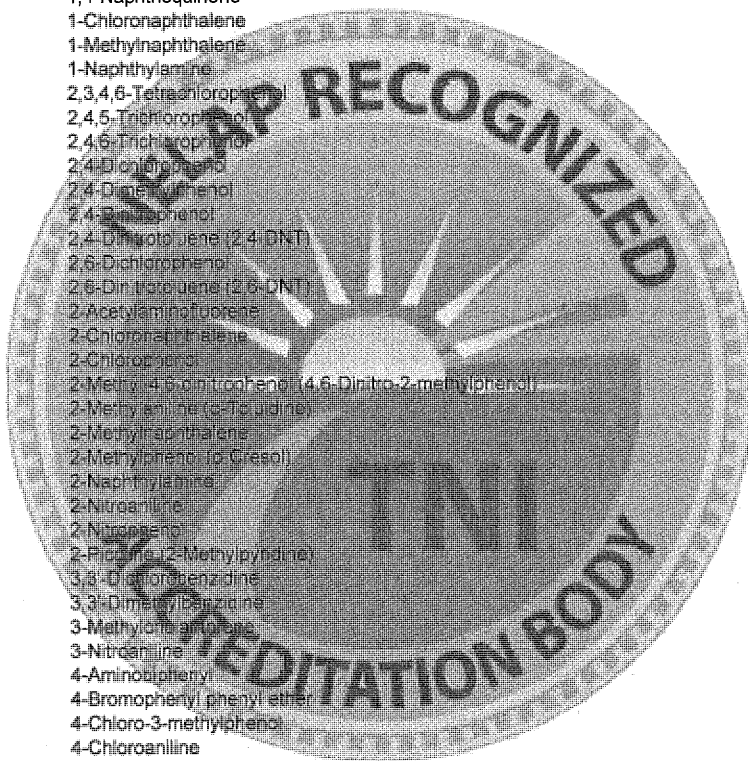
TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

As of 01/16/2012 **this list supercedes all previous lists for this certificate number.**
Customers. Please verify the current accreditation standing with ORELAP.

Analyte Code	Analyte
5155	1,2,4-Trichlorobenzene
4610	1,2-Dichlorobenzene
6221	1,2-Diphenylhydrazine
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
4615	1,3-Dichlorobenzene
6160	1,3-Dinitrobenzene (1,3-DNB)
4620	1,4-Dichlorobenzene
6420	1,4-Naphthoquinone
5790	1-Chloronaphthalene
6380	1-Methylnaphthalene
6425	1-Naphthylamine
6735	2,3,4,6-Tetrachlorophenol
6835	2,4,5-Trichlorophenol
6840	2,4,6-Trichlorophenol
6000	2,4-Dichlorophenol
6130	2,4-Dimethylphenol
6175	2,4-Dinitrophenol
6185	2,4-Dinitrobenzene (2,4-DNT)
6005	2,6-Dichlorophenol
6190	2,6-Dinitrobenzene (2,6-DNT)
5515	2-Acetylaminofluorene
5795	2-Chloronaphthalene
5800	2-Chlorophenol
6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)
5145	2-Methylaniline (o-Toluidine)
6385	2-Methylnaphthalene
6400	2-Methylphenol (p-Cresol)
6430	2-Naphthylamine
6460	2-Nitroaniline
6490	2-Nitrophenol
5050	2-Picoline (2-Methylpyridine)
5945	3,3-Dichlorobenzidine
6120	3,3-Dimethylbenzidine
6355	3-Methylaniline
6465	3-Nitroaniline
5540	4-Aminobiphenyl
5660	4-Bromophenyl phenyl ether
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
6105	4-Dimethyl aminoazobenzene
6410	4-Methylphenol (p-Cresol)
6470	4-Nitroaniline
6500	4-Nitrophenol
6510	4-Nitroquinoline 1-oxide
6570	5-Nitro-o-toluidine
6115	7,12-Dimethylbenz(a) anthracene
9417	7h-Dibenzo(c, g) carbazole
6125	a-a-Dimethylphenethylamine
5500	Acenaphthene
5505	Acenaphthylene
5510	Acetophenone
5545	Aniline
5555	Anthracene
5560	Aramite
7065	Atrazine
5565	Benzal chloride
5570	Benzaldehyde
5595	Benzidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene



ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

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TN 37122

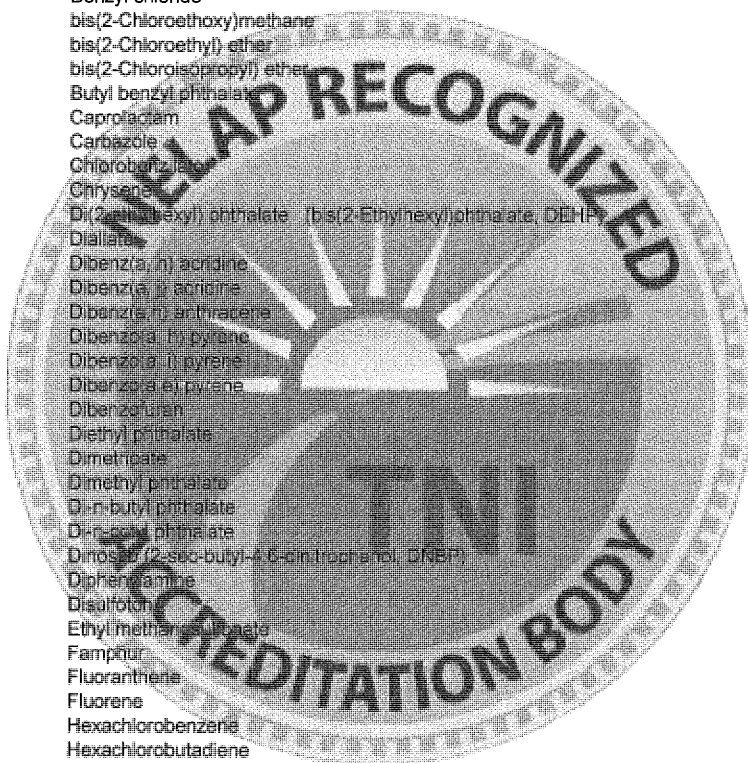
Issue Date: 01/16/2012

Expiration Date: 01/15/2013

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Customers. Please verify the current accreditation standing with ORELAP.

Analyte Code	Analyte
5590	Benzo(g,h,i)perylene
9309	Benzo(j)fluoranthene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5610	Benzoic acid
5625	Benzotrichloride
5630	Benzyl alcohol
5635	Benzyl chloride
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
5670	Butyl benzyl phthalate
7180	Caprolactam
5680	Carbazole
7260	Chlorobenzilate
5855	Chrysene
6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
7405	Diallate
9354	Dibenz(a,h)acridine
5900	Dibenz(a,h)acridine
5895	Dibenz(a,h)anthracene
9348	Dibenz(a,h)pyrene
9351	Dibenz(a,h)pyrene
5890	Dibenz(a,h)pyrene
5905	Dibenzofuran
6070	Diethyl phthalate
7475	Dimetacate
6135	Dimethyl phthalate
5925	D-n-butyl phthalate
6200	D-n-octyl phthalate
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
6205	Diphenylamine
8625	Disulfoton
6260	Ethyl methanesulfonate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6290	Hexachlorophene
6295	Hexachloropropene
6315	Indeno(1,2,3-cd) pyrene
7725	Isodrin
6320	Isophorone
6325	Isosafrole
7740	Kepone
6345	Methapyrilene
6375	Methyl methanesulfonate
7825	Methyl parathion (Parathion, methyl)
5005	Naphthalene
5875	n-Decane
5015	Nitrobenzene
6525	n-Nitrosodiethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitroso-di-n-butylamine
6545	n-Nitrosodi-n-propylamine
6535	n-Nitrosodiphenylamine
6550	n-Nitrosomethylethylamine
6555	n-Nitrosomorpholine



ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet

TN 37122

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Expiration Date: 01/15/2013

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Customers. Please verify the current accreditation standing with ORELAP.

Analyte Code	Analyte
6560	n-Nitrosopiperidine
6565	n-Nitrosopyrrolidine
6580	n-Octadecane
8290	o,o,p-Triethyl phosphorothioate
7955	Parathion, ethyl
6590	Pentachlorobenzene
5035	Pentachloroethane
6600	Pentachloronitrobenzene
6605	Pentachlorophenol
6610	Phenacetin
6615	Phenanthrene
6625	Phenol
7985	Phorate
9663	p-Phenylenediamine
6650	Pronamide (Kerb)
6665	Pyrene
5095	Pyridine
6685	Safrole
8155	Sulfotepp
8235	Thionazin (Zinophos)

EPA 8270D SIM	10242509	Semivolatile Organic compounds by GC/MS Selective Ion Monitoring
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Analyte Code	Analyte
6380	1-Methylnaphthalene
6385	2-Methylnaphthalene
5500	Acenaphthene
5505	Acenaphthylene
5555	Anthracene
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5855	Chrysene
5895	Dibenz(a,h)anthracene
6265	Fluoranthene
6270	Fluorene
6315	Indeno(1,2,3-cd) pyrene
5005	Naphthalene
6615	Phenanthrene
6665	Pyrene

EPA 8310	10187607	Polynuclear Aromatic Hydrocarbons by HPLC/UV-VIS
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Analyte Code	Analyte
5500	Acenaphthene
5505	Acenaphthylene
5555	Anthracene
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5855	Chrysene
5895	Dibenz(a,h)anthracene
6265	Fluoranthene
6270	Fluorene
6315	Indeno(1,2,3-cd) pyrene
5005	Naphthalene
6615	Phenanthrene

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet

TN 37122

Issue Date: 01/16/2012

Expiration Date: 01/15/2013

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Customers. Please verify the current accreditation standing with ORELAP.

Analyte Code	Analyte
6665	Pyrene
EPA 8330	10189807 Nitroaromatics and Nitramines by HPLC/UV-VIS
Analyte Code	Analyte
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
6160	1,3-Dinitrobenzene (1,3-DNB)
9651	2,4,6-Trinitrotoluene (2,4,6-TNT)
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
9303	2-Amino-4,6-dinitrotoluene (2-am-dnt)
6462	2-Nitroguanidine
9507	2-Nitrotoluene
9510	3-Nitrotoluene
9306	4-Amino-2,6-dinitrotoluene (4-am-dnt)
9513	4-Nitrotoluene
6415	Methyl-2,4,6-trinitrophenylnitramine (tetryl)
5015	Nitrobenzene
6485	Nitroglycerin
9522	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)
9558	Pentaerythritoltetranitrate
9432	RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)
EPA 8330A	10190008 Nitroaromatics and Nitramines by High Performance Liquid Chromatography (HPLC)
Analyte Code	Analyte
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
6160	1,3-Dinitrobenzene (1,3-DNB)
9651	2,4,6-Trinitrotoluene (2,4,6-TNT)
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
9303	2-Amino-4,6-dinitrotoluene (2-am-dnt)
9507	2-Nitrotoluene
9510	3-Nitrotoluene
9306	4-Amino-2,6-dinitrotoluene (4-am-dnt)
9513	4-Nitrotoluene
6415	Methyl-2,4,6-trinitrophenylnitramine (tetryl)
5015	Nitrobenzene
6485	Nitroglycerin
9522	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)
9558	Pentaerythritoltetranitrate
9432	RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)
EPA 9010B	10193007 Total and Amenable Cyanide by Distillation and UV-Vis
Analyte Code	Analyte
1510	Amenable cyanide
1645	Total cyanide
EPA 9010C	10243002 Total and Amenable Cyanide by Distillation and UV-Vis
Analyte Code	Analyte
1510	Amenable cyanide
1645	Total cyanide
EPA 9012A	10193405 Total and Amenable Cyanide (automated colorimetric with off-line distillation)
Analyte Code	Analyte
1645	Total cyanide

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

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EPA 9012B	10243206	Total and Amenable Cyanide (automated colorimetric with off-line distillation)
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Analyte Code	Analyte
1645	Total cyanide

EPA 9013	10193609	Cyanide Extraction Procedure for Solids and Oils
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Analyte Code	Analyte
8031	Extraction/Preparation

EPA 9013A	10308802	Cyanide Extraction Procedure for Solids and Oils
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Analyte Code	Analyte
8031	Extraction/Preparation

EPA 9023	10195003	Extractable Organic Halides (EOX) in Solids
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Analyte Code	Analyte
1720	Extractable organics halides (EOX)

EPA 9030B	10195605	Acid-Soluble and Acid-Insoluble sulfides: Distillation
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Analyte Code	Analyte
2005	Sulfide

EPA 9034	10196006	Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides
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Analyte Code	Analyte
2005	Sulfide

EPA 9045C	10198400	Soil and Waste pH
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Analyte Code	Analyte
1900	pH

EPA 9045D	10244607	Soil and Waste pH
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Analyte Code	Analyte
1900	pH

EPA 9050A	10198808	Specific Conductance
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Analyte Code	Analyte
1610	Conductivity

EPA 9056	10199403	Determination of Inorganic Anions by Ion Chromatography
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Analyte Code	Analyte
1540	Bromide
1575	Chloride
1730	Fluoride
1810	Nitrate as N
1840	Nitrite as N
1870	Orthophosphate as P
2000	Sulfate

EPA 9056A	10199607	Determination of Inorganic Anions by Ion Chromatography
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Analyte Code	Analyte
1540	Bromide

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

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Analyte Code	Analyte
1575	Chloride
1730	Fluoride
1805	Nitrate
1835	Nitrite
1870	Orthophosphate as P
2000	Sulfate

EPA 9060	10200201	Total Organic Carbon
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Analyte Code	Analyte
2040	Total organic carbon

EPA 9060A	10244801	Total Organic Carbon
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Analyte Code	Analyte
2040	Total organic carbon

EPA 9071B	10201602	Oil and Grease Extraction Method for sludge and sediment samples
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Analyte Code	Analyte
1860	Oil & Grease

EPA 9095	10204009	Paint Filter Liquids Test
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Analyte Code	Analyte
8031	Extraction/Preparation

EPA 9095A	10204203	Paint Filter Liquids Test
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Analyte Code	Analyte
8031	Extraction/Preparation

NWTPH-Dx	90018409	Oregon DEQ TPH Diesel Range
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Analyte Code	Analyte
9369	Diesel range organics (DRO)

NWTPH-Gx	90018603	Oregon DEQ TPH Gasoline Range Organics by GC/FID-PID Purge & Trap
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Analyte Code	Analyte
9408	Gasoline range organics (GRO)

NWTPH-HCID	90013200	Oregon DEQ Total Petroleum Hydrocarbon ID
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Analyte Code	Analyte
2050	Total Petroleum Hydrocarbons (TPH)

OA-1	90013802	Iowa TPH Gx by GC/PID Purge & Trap
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Analyte Code	Analyte
9408	Gasoline range organics (GRO)

OA-2	90014009	Iowa TPH Dx
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Analyte Code	Analyte
9369	Diesel range organics (DRO)

ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

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Customers. Please verify the current accreditation standing with ORELAP.

SM 2540 G 20th ED

20005258

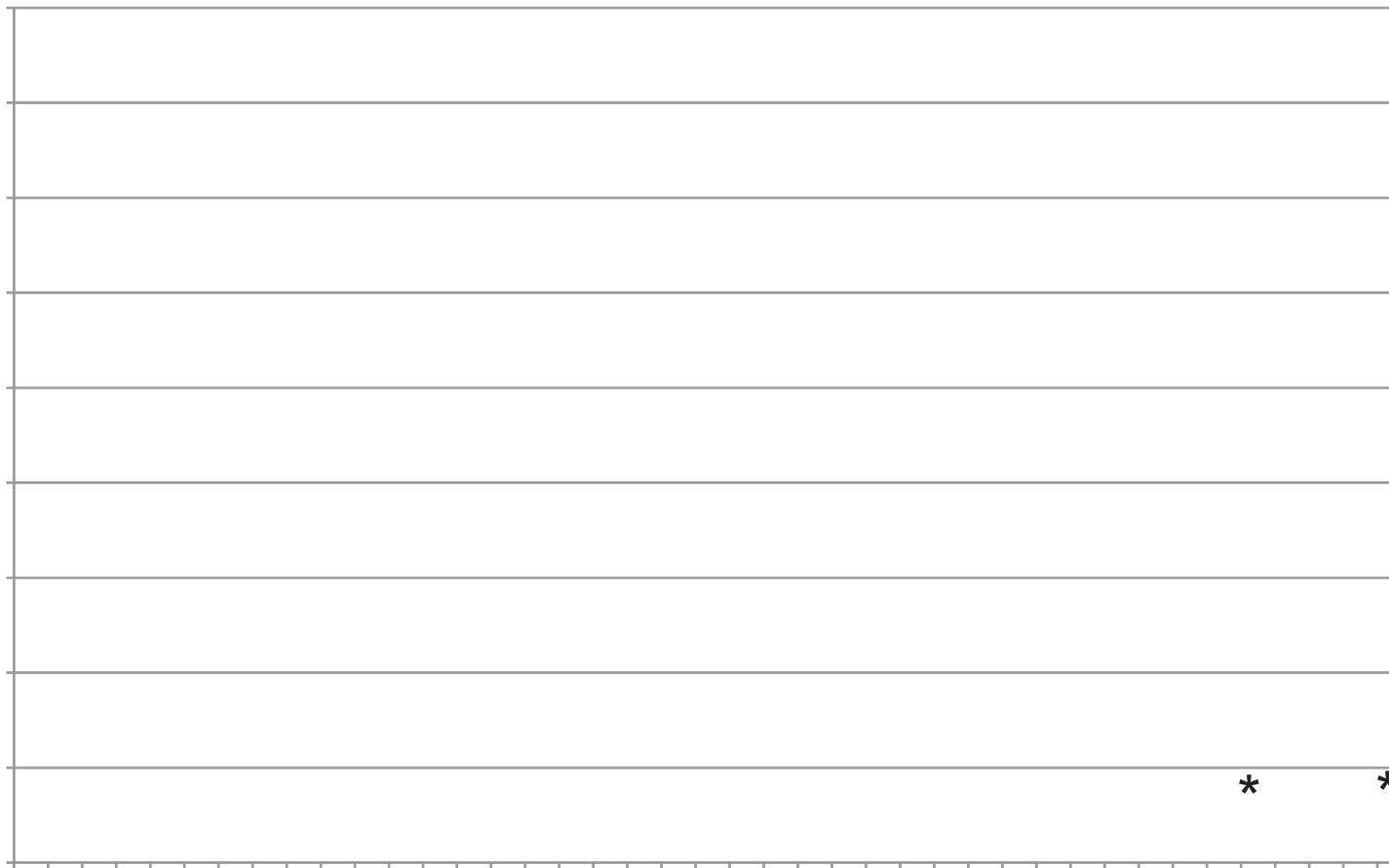
Total, Fixed, and Volatile Solids in Solid and Semisolid Samples

<u>Analyte Code</u>	<u>Analyte</u>
1725	Total, fixed, and volatile residue



Appendix D

Trend Plots for Select Wells



Legend:

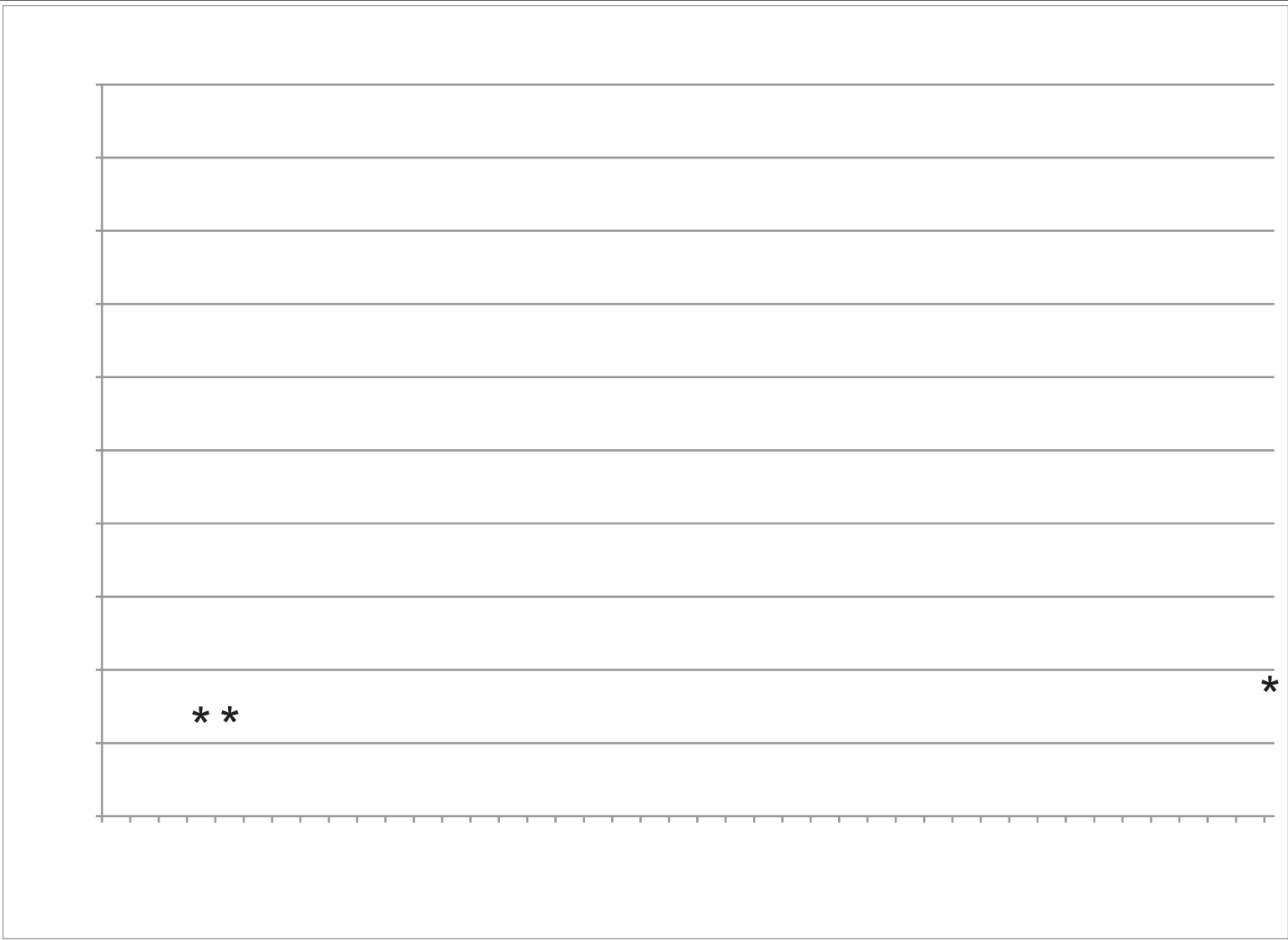
- ◆— Pentachlorophenol Concentration (µg/L)
- Trendline
- * Value Below Method Reporting Limit (µg/L)

MW-1S




2012 Groundwater Monitoring Report
Taylor Lumber and Treating Superfund Site
Sheridan, Oregon





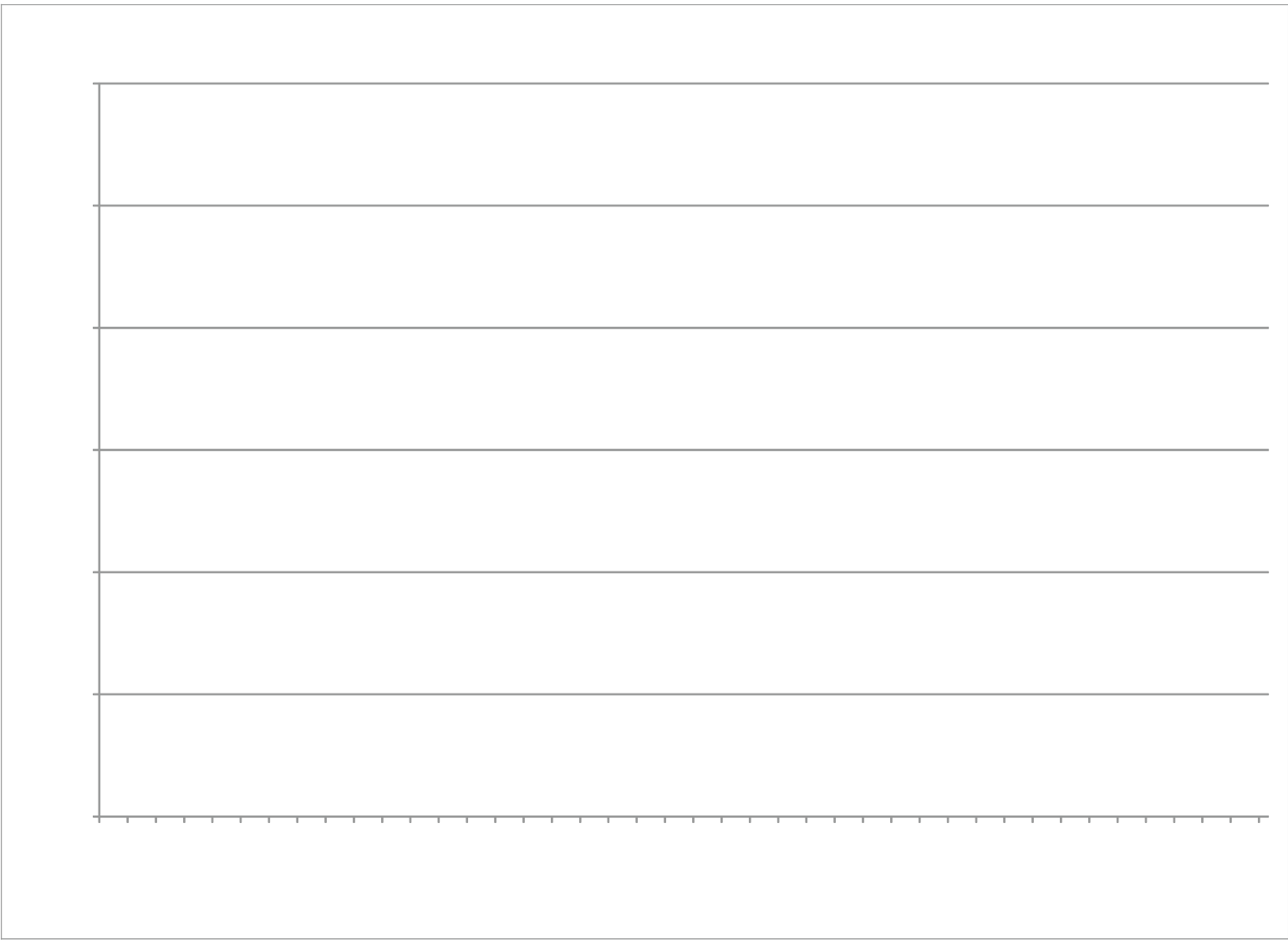
Project Number	1843-00	Figure
May 2012		D-1





Legend:



-  Pentachlorophenol Concentration (µg/L)
-  Trendline
-  Value Below Method Reporting Limit (µg/L)

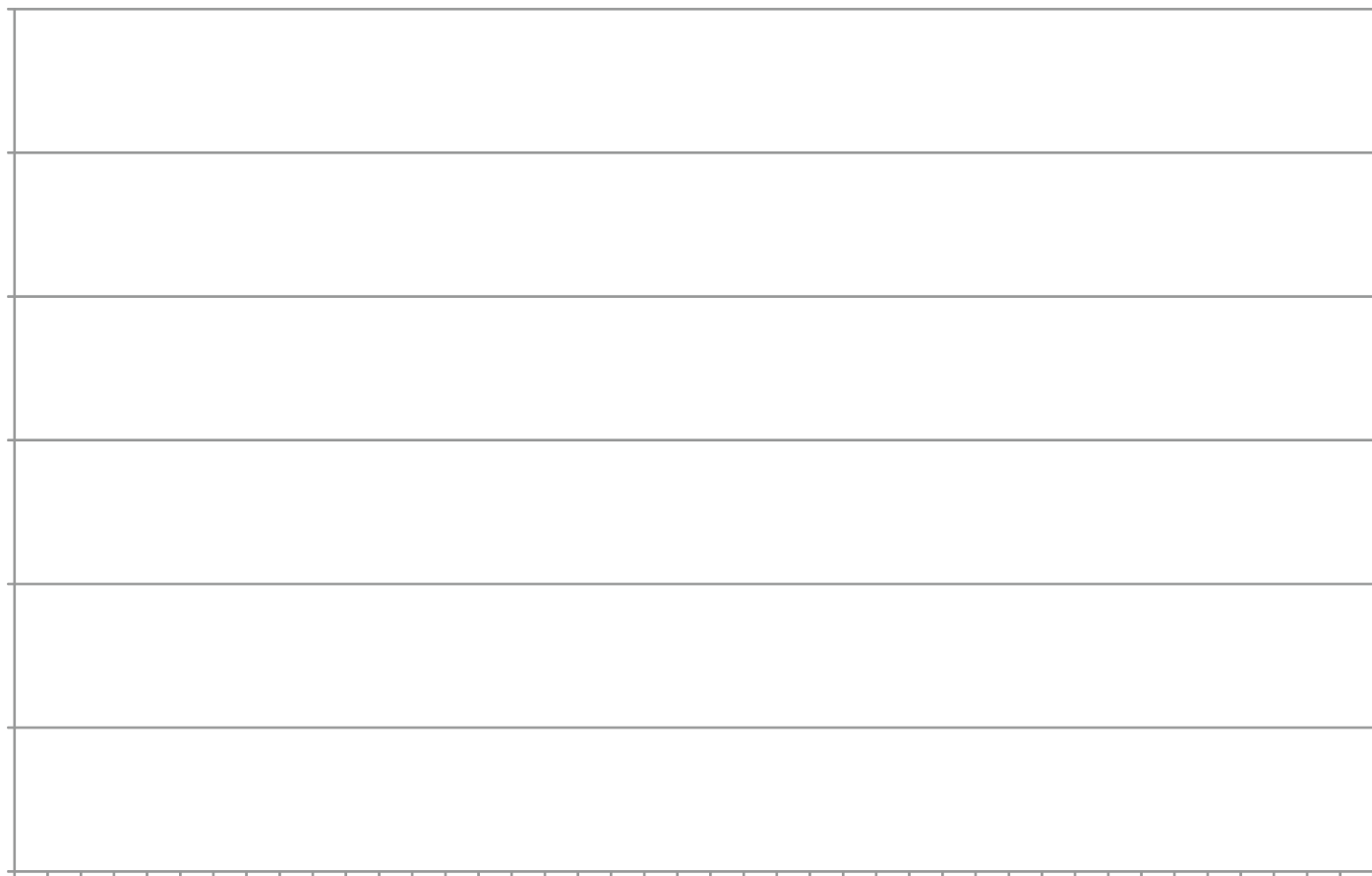
<p>MW-11S</p> <p>2012 Groundwater Monitoring Report</p> <p>Taylor Lumber and Treating Superfund Site</p> <p>Sheridan, Oregon</p>		
 <p>Ash Creek Associates</p> <p><small>A Division of Apex Companies, LLC</small></p>	 <p>APEX</p>	<p>Project Number 1843-00</p>
	<p>May 2012</p>	
		<p>Figure</p> <p>D-2</p>



Legend:

-  Pentachlorophenol Concentration (µg/L)
-  Trendline

MW-15S		
2012 Groundwater Monitoring Report Taylor Lumber and Treating Superfund Site Sheridan, Oregon		
 Ash Creek Associates <small>A Division of Apex Companies, LLC</small>	Project Number	1843-00
	May 2012	
	Figure D-3	



Legend:

- ◆— Pentachlorophenol Concentration (µg/L)
- Trendline

MW-16S




2012 Groundwater Monitoring Report
Taylor Lumber and Treating Superfund Site
Sheridan, Oregon





Project Number	1843-00	Figure
May 2012		D-4





Legend:

-  Pentachlorophenol Concentration (µg/L)
-  Trendline
-  Value Below Method Reporting Limit (µg/L)

PZ-105 2012 Groundwater Monitoring Report Taylor Lumber and Treating Superfund Site Sheridan, Oregon		
 Ash Creek Associates <small>A Division of Apex Companies, LLC</small>		Project Number 1843-00
	May 2012	
		Figure D-5



Legend:

-  Pentachlorophenol Concentration (µg/L)
-  Trendline

MW-103S

2012 Groundwater Monitoring Report
Taylor Lumber and Treating Superfund Site
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Project Number	1843-00	Figure
May 2012		D-6